Service

Maintenance
Golf 2004 ➤
Golf Plus 2005 ➤
Edition 02.2014

Service Department. Technical Information

Service

Maintenance

Heading

1. Engine Overview
2. Service Work
3. General Information
4. Procedure Descriptions
5. Glossary

Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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1 Engine Overview

(Edition 02.2014)

Note

To make it easier to search for an engine, the engine codes are organized alphabetically.

Gasoline engines

Engines: ⇒	Gasoline engine	Gasoline engine
Displacement l	2.5	2.5
Engine code	**BGP**	**BGQ**
Number of cylinders/valves per cylinder	5/4	5/4
Output kW at RPM	110/5000	110/5000
Torque Nm at RPM	228/3750	228/3750
Bore Diameter in mm	82.5	82.5
Stroke mm	92.8	92.8
Compression ratio	10	10
Fuel injection/Ignition	Motronic ME 7.1.1 SRE	Motronic ME 7.1.1 SRE
RON Unleaded gasoline, minimum	91	91
Camshaft drive	Chain	Chain

1) also 91 RON, but with reduced performance

Engines: ⇒	Gasoline engine
Displacement l	2.0
Engine code	**BPY**
Number of cylinders/valves per cylinder	4/4
Output kW at RPM	147/5700
Torque Nm at RPM	280/2000
Bore Diameter in mm	82.5
Stroke mm	92.8
Compression ratio	10.5
Fuel injection/Ignition	Motronic MED 9.1 TFSI
RON Unleaded gasoline, minimum	95
Camshaft drive	Toothed belt

1) also 91 RON, but with reduced performance

Engines: ⇒	Gasoline engine
Displacement l	3.2
Engine code	**BUB**
Number of cylinders/valves per cylinder	6/4
Output kW at RPM	184/6300
Torque Nm at RPM	320/2500 to 3000

Engines:	⇒	Gasoline engine
Displacement	l	3.2
Engine code		**BUB**
Bore	Diameter in mm	84
Stroke	mm	95.9
Compression ratio		11.3
Fuel injection/Ignition		Motronic ME 7.1.1 SRE
RON	Unleaded gasoline, minimum	95
Camshaft drive		Chain

1) also 91 RON, but with reduced performance

Engines:	⇒	Gasoline engine	Gasoline engine	Gasoline engine
Displacement	l	2.0	3.2	2.5
Engine code		**CBFA**	**CBRA**	**CBTA**
Number of cylinders/valves per cylinder		4/4	6/4	5/4
Output	kW at RPM	147/5100 to 6000	184/6300	125/5000
Torque	Nm at RPM	280/1700 to 5000	320/2500/3000	240/4250
Bore	Diameter in mm	82.5	84	82.5
Stroke	mm	92.8	95.9	92.8
Compression ratio		10.3	10.85	10.0
Fuel injection/Ignition		Motronic MED 17.1 TSI Turbocharger	Motronic ME 7.1.1 SRE	Motronic ME 7.1.1 or 17.5 SRE
RON	Unleaded gasoline, minimum	95	98[2]	91
Camshaft drive		Chain	Chain	Chain

2) also 95 RON, but with reduced performance

Engines:	⇒	Gasoline engine	Gasoline engine
Displacement	l	2.5	2.0
Engine code		**CBUA**	**CCTA**
Number of cylinders/valves per cylinder		5/4	4/4
Output	kW at RPM	125/5000	147/5100 to 6000
Torque	Nm at RPM	240/4250	280/1700 to 5000
Bore	Diameter in mm	82.5	82.5
Stroke	mm	92.8	92.8
Compression ratio		10.0	9.6
Fuel injection/Ignition		Motronic ME 7.1.1 or 17.5 SRE	Motronic MED 17.5 TSI Turbocharger
RON	Unleaded gasoline, minimum	91	95
RON	Ethanol E85	---	---
Camshaft drive		Chain	Chain

1) also 91 RON, but with reduced performance

2) also 95 RON, but with reduced performance

2 Service Work

⇒ “2.1 Time or Distance Dependent Service Information”, page 4

⇒ “2.2 Service Tables”, page 6

⇒ “2.3 Delivery Inspection”, page 6

⇒ “2.4 Oil Change Service”, page 11

⇒ “2.5 Interval Service through MY 2007”, page 11

⇒ “2.6 Interval Service from MY 2008”, page 11

⇒ “2.7 Interval Service Inspection through MY 2007”, page 11

⇒ “2.8 Inspection Service from MY 2008”, page 11

⇒ “2.9 Time- and/or Distance-Dependent Additional Work”, page 11

2.1 Time or Distance Dependent Service Information

⇒ “2.1.1 Service Identification”, page 4

⇒ “2.1.2 Time and/or Distance Dependent Service”, page 4

⇒ “2.1.3 Service Interval Display”, page 5

2.1.1 Service Identification

- Check the vehicle data label ⇒ “3.6 Vehicle Data Label”, page 18 to see if the vehicle has PR number “QG0” or “QG2”. The PR number determines the Service Intervals. Refer to ⇒ “2.2.1 Service Intervals”, page 6 .

Vehicle with the following PR number

“QG0” or “QG2” means time and/or distance dependent service

2.1.2 Time and/or Distance Dependent Service

Vehicles with PR numbers “QG0/QG2” have time and/or distance dependent service. These service intervals are established by Volkswagen and the vehicle must be brought in for service at specific kilometer or time intervals. Under ordinary operating conditions, this technically assures that the service will be performed when the interval is reached.

The time and/or distance dependent service is therefore referred to as being fixed.

On vehicles,

- which were delivered without the maintenance interval extension feature (PR number “QG0” = without maintenance interval extension feature, PR number “QG2” = the maintenance interval extension cannot be activated)
- or where the maintenance interval extension was switched off

applies to time and/or distance dependent service.

The fixed service intervals apply to all maintenance services, which include an oil change.

Vehicles with PR number “QG0”

The time or distance dependent service intervals (fixed intervals) apply to the vehicle maintenance.

Vehicles with PR number “QG2”

This means these vehicles have a fixed Service Interval Display (SID), refer to ⇒ “2.1.3 Service Interval Display”, page 5 and the time or distance dependent service interval apply to the vehicle maintenance. These vehicles have the following components:

- Fixed service interval display in instrument cluster
- Engine oil level sensor
- Brake pad wear display, if equipped

2.1.3 Service Interval Display

Maintenance Interval Extension ⇒ page 5 .

Fixed Service Interval Display (Vehicles with Time or Distance Dependent Service only, PR Number, “QG0/QG2” ⇒ page 5 .

Service Interval Display, Resetting, refer to ⇒ “4.37 Service Interval Display, Resetting”, page 84 .

Service Interval Display, Coding, refer to ⇒ “4.38 Service Interval Display, Recoding”, page 86 .

Introduction of the Maintenance Interval Extension

Check with the importer if the maintenance interval extension is available in your market.

Fixed Service Interval Display (Vehicles with Time or Distance Dependent Service only, PR Number, “QG0/QG2”

Calculating the maintenance intervals:

- Time and/or distance dependent service vehicles: These service intervals are established by Volkswagen and the vehicle must be brought in for service at specific kilometer or time intervals.
- Under ordinary operating conditions, this technically assures that the service will be performed when the interval is reached.

2.2 Service Tables

⇒ “2.2.1 Service Intervals”, page 6

⇒ “2.2.2 Volkswagen Engine Oil Standards”, page 6

⇒ “2.2.3 Filter Change Interval”, page 6

⇒ “2.2.4 Toothed Belt Replacement Interval”, page 6

⇒ “2.2.5 Spark Plug Change Interval”, page 6

2.2.1 Service Intervals

Note

- *With combined distance and time measurements: whichever comes first.*
- *In addition to interval service or inspection service or other inspection service interval must be performed, depending on operating conditions and vehicle equipment. Refer to ⇒ “3.7 Severe Operating Conditions”, page 18 .*
- *It is also possible that additional work, depending on entries in the Maintenance booklet (or sticker: Your Next Service), must be performed outside of the maintenance interval.*

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03

2.2.2 Volkswagen Engine Oil Standards

Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03

2.2.3 Filter Change Interval

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03

2.2.4 Toothed Belt Replacement Interval

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03

Note

From MY 2008, four-digit engine codes are used. The first 3 digits describe the engine structure and are still stamped on the engine as before. The fourth digit describes the engine output and depends on the engine control module. Four-digit engine codes are on the type plate, the vehicle data label and the engine control module.

2.2.5 Spark Plug Change Interval

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03

2.3 Delivery Inspection

- The sequence of the individual service positions has been tried, tested and optimized. Therefore they should be adhered to, to prevent unnecessary work interruptions.
- Perform the appropriate service on vehicles on the lot and in storage “Maintenance tables”.

Work to be completed	Page
– Battery: Make sure battery clamps are secure. Check by hand.	Refer to ⇒ “4.5 Battery Terminals, Checking for Secure Fit”, page 24 .
– Battery: check with Battery Tester with Printer - VAS5097A- .	Refer to ⇒ “4.6 Battery, Checking with Battery Tester VAS5097 A or Battery Tester VAS6161 ”, page 28 .
– Transportation Mode: Switching Off	Refer to ⇒ “4.46 Transport Mode, Deactivating”, page 98 .
– Service Interval Display, Resetting • Applies to stock and stored vehicles only	Refer to ⇒ “4.37 Service Interval Display, Resetting”, page 84 .
– Radio Code, Checking with Vehicle Diagnostic Tester	Refer to ⇒ “4.31 Radio Code, Checking with Vehicle Diagnostic Tester ”, page 71 .
– Radio and Radio Navigation System, Enter the PIN for the anti-theft code and assign some local radio stations to the station buttons	Refer to ⇒ “4.32 Radio and Radio Navigation System, Entering PIN for Anti-Theft Code and Assign Local Radio Stations”, page 71 .
– All switches, electrical consumers, displays, and other controls: Checking Function	
– Clock: Setting	Refer to ⇒ “4.49 Clock and Date, Setting”, page 100 .

Work to be completed	Page
– Power Windows, Checking	Refer to ⇒ “4.13 Power Windows, Checking”, page 40 .
– Compass, Calibrating for North America	Refer to ⇒ “4.21 Compass, Calibrating”, page 48 .
– Vehicle interior: Check the following for cleanliness: front and rear seats, interior trim, carpet/ floor mats and windows	
– Seat covers and carpet protection: Remove	
– Install all equipment delivered with the vehicle (if applicable): Floor mats, wheel covers	
– Edge protection (plastic foil) on doors: Remove	
– Vehicle exterior: Check the following for cleanliness: Paintwork, decorative parts, windows, wiper blades and surfaces	
– Remove the Windshield Wiper Protectors.	Refer to ⇒ “4.42 Windshield Wiper Protectors, Removing”, page 93 .
– Wheel Bolts: Tightening to Tightening Specification	Refer to ⇒ “4.30 Wheel Bolts, Tightening Specifications”, page 69 .
– Tire pressure in all 4 tires and spare tire: Check. 3.5 bar is filled from factory	Refer to ⇒ “4.7 Tires, Checking Condition, Tire Wear Pattern, Tire Pressure, Tread Depth and Age”, page 29 .
– Tire Pressure Monitoring System: Perform Basic Setting	Refer to ⇒ “4.33 Tire Pressure Monitoring System: Perform Basic Setting”, page 72 .

Work to be completed	Page
– Special equipment “spare wheel package”: Check condition and tire pressure	Refer to ⇒ “4.7 Tires, Checking Condition, Tire Wear Pattern, Tire Pressure, Tread Depth and Age”, page 29 .
– Vehicle from underneath: Check the following for leaks and damage (without removing engine noise insulation): Assemblies; steering; CV joint bellows; hoses and fluid reservoirs.	Refer to ⇒ “4.26 Engine and Engine Compartment Components, Checking for Leaks and Damage.”, page 62 .
– Transportation safeguards (vehicles with sport suspension): Remove the locking pieces from the front axle struts	Refer to ⇒ “4.47 Transport Protection, Removing Locking Pieces from Front Axle Struts”, page 99 .
– Underbody: Inspect for damage	Refer to ⇒ “4.48 Underbody, Underbody Components, Checking for Damage”, page 100 .
– Windshield and Headlamp Washer System, Check function and adjustment; top off to maximum with Windshield Washer Fluid Concentrate - G 052 164- .	Refer to ⇒ “4.41 Windshield and Headlamp Washer System, Checking Function”, page 89 .
– Engine Oil Level, Check. Note oil specification.	Refer to ⇒ “4.27 Engine Oil Level, Checking”, page 63 .

Work to be completed	Page
– Engine and components in engine compartment (from above): Checking for Leaks and Damage.	Refer to ⇒ “4.26 Engine and Engine Compartment Components, Checking for Leaks and Damage.”, page 62 .
– Coolant level: Check; the level must be at maximum	Refer to ⇒ “4.22 Coolant System, Check Freeze Protection and Coolant Level”, page 49 .
– Brake Fluid Level: Check; the level must be at maximum	Refer to ⇒ “4.9 Brake Fluid Level, Checking”, page 36 .
– Keys: Make sure there are the correct number of keys and check functionality; wipe off any grease if necessary	
– Vehicle data label: Apply	Refer to ⇒ “3.2 Labels”, page 13 .
◆ Customer Maintenance booklet: – Enter the delivery inspection date and check off the first Service: ◆ Oil change service on time or distance dependent service vehicles (PR numbers QG0/QG2) 1) – Enter the vehicle data in the customer Maintenance booklet under “Vehicle Delivery”	
– Make sure all the vehicle literature is there and prepare for delivery to customer	
– Road Test	Refer to ⇒ “4.29 Road Test”, page 68 .

1) Service Identification. Refer to ⇒ “2.1.1 Service Identification”, page 4 .

2.4 Oil Change Service

Note

- ♦ *An oil change is always a time or distance dependent service “QG0/QG2”. Refer to ⇒ “2.1.2 Time and/or Distance Dependent Service”, page 4 .*
- ♦ *Inform the customer of the repair measures required if a problem is detected during service work.*

– Ask if the customer wants:

- New wiper blades.
- To fill the washer fluid G 052 164 (cleaner and freeze protection).

– Check whether the first aid kit expiration date has passed and if the warning triangle is present.

– Removing and installing lower engine compartment cover (noise insulation pan). Refer to ⇒ “4.25 Lower Engine Compartment Cover, Removing and Installing”, page 62

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03 and ⇒ Fluid Capacity Tables; Rep. Gr. 03

2.5 Interval Service through MY 2007

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03 and ⇒ Fluid Capacity Tables; Rep. Gr. 03

2.6 Interval Service from MY 2008

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03 and ⇒ Fluid Capacity Tables; Rep. Gr. 03

2.7 Interval Service Inspection through MY 2007

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03 and ⇒ Fluid Capacity Tables; Rep. Gr. 03

2.8 Inspection Service from MY 2008

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03 and ⇒ Fluid Capacity Tables; Rep. Gr. 03

2.9 Time- and/or Distance-Dependent Additional Work

Refer to ⇒ Maintenance Intervals; Rep. Gr. 03 and ⇒ Fluid Capacity Tables; Rep. Gr. 03

3 General Information

⇒ “3.1 Lifting Vehicle On a Hoist or Workshop Hoist”, page 12
⇒ “3.2 Labels”, page 13
⇒ “3.3 Customer Maintenance Booklet Entries”, page 14
⇒ “3.4 Vehicle Diagnostic Tester , Connecting”, page 14
⇒ “3.5 Vehicle Identification Number”, page 17
⇒ “3.6 Vehicle Data Label”, page 18
⇒ “3.7 Severe Operating Conditions”, page 18
⇒ “3.8 Engine Code and Engine Number”, page 19
⇒ “3.9 Type Plate”, page 19

3.1 Lifting Vehicle On a Hoist or Workshop Hoist

⇒ “3.1.1 Safety Precautions”, page 12
⇒ “3.1.2 Hoist and Jack Mounting Points”, page 12

3.1.1 Safety Precautions

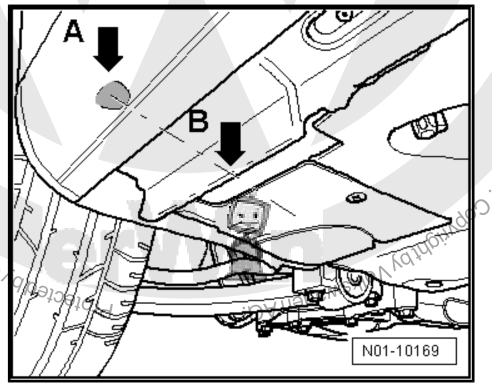
WARNING

- *Before driving the vehicle onto a workshop hoist, make sure there is enough clearance between any low-lying vehicle components and the hoist.*
- *Before driving a vehicle onto a lifting platform it must be ensured that the vehicle weight does not exceed the permissible lifting capacity of the platform.*
- *Vehicle may only be lifted at points indicated in illustration in order to avoid damaging vehicle floor pan and to prevent vehicle from tipping.*
- *Never start engine and engage a gear with vehicle lifted so long as even one wheel has contact with the floor! There is a risk of an accident if this is not observed!*
- *If work is to be performed under vehicle it must be supported by suitable stands.*

3.1.2 Hoist and Jack Mounting Points

Front Mounting Point:

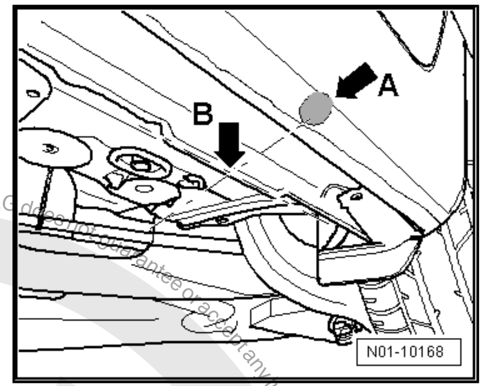
– Place support plate, in area of side member marking -arrow A-, on vertical stiffener of floor plate -arrow B-.



WARNING

Make sure that side member stiffener contacts support plate of lifting platform at center.

Rear Mounting Point:



– Place support plate, in area of side member marking -arrow A-, on vertical stiffener of floor plate -arrow B-.

⚠ WARNING

Make sure that side member stiffener contacts support plate of lifting platform at center.

3.2 Labels

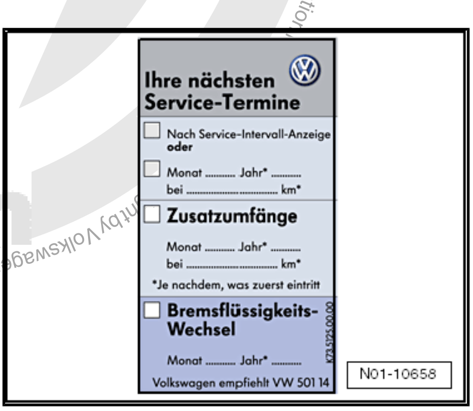
⇒ “3.2.1 Next Service Label, Applying”, page 13

⇒ “3.2.2 Data Label, Applying in Customer Maintenance Booklet”, page 14

3.2.1 “Next Service” Label, Applying

Note

Use the “Next Service” label during the delivery inspection after the “First Service” label is no longer valid.



Ihre nächsten Service-Termine

☐ Nach Service-Intervall-Anzeige **oder**

☐ Monat .... Jahr* ....
bei .... km*

☐ **Zusatzumfänge**

Monat .... Jahr* ....
bei .... km*

*Je nachdem, was zuerst eintritt

☐ **Bremsflüssigkeits-Wechsel**

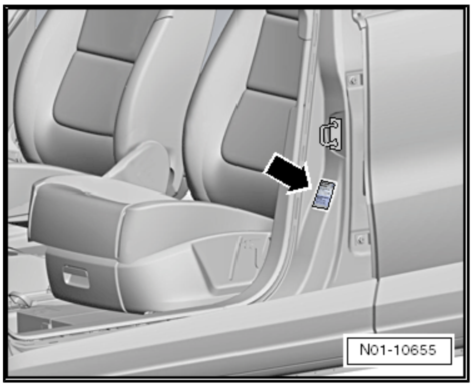
Monat .... Jahr* ....

Volkswagen empfiehlt VW 501 14

K73.5125.00.00

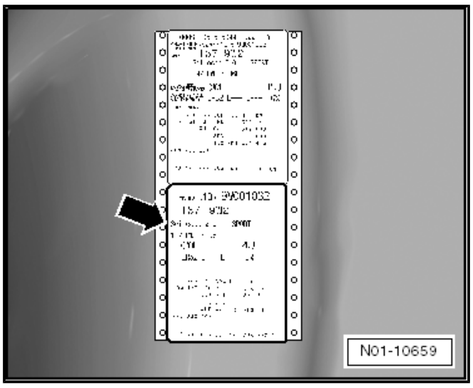
– “Next service” label: Check off an oil change service or an inspection service (next service due) and enter the date and the odometer reading.

Service intervals. Refer to ⇒ “2.2.1 Service Intervals”, page 6 .



– Apply the label to the B-pillar on the driver side -arrow-.

3.2.2 “Data Label”, Applying in Customer Maintenance Booklet



– Apply the bottom data label -arrow- inside the customer Maintenance booklet.

3.3 Customer Maintenance Booklet Entries

If a part is being replaced earlier than what is recommended by the manufacturer, for example, the toothed belt, then the time period for the next change begins the time the part is replaced.

- For this reason it is very important to document inside the customer Maintenance booklet every time a part is replaced.
- This applies also to parts that are being replaced earlier than when they are scheduled to be replaced.

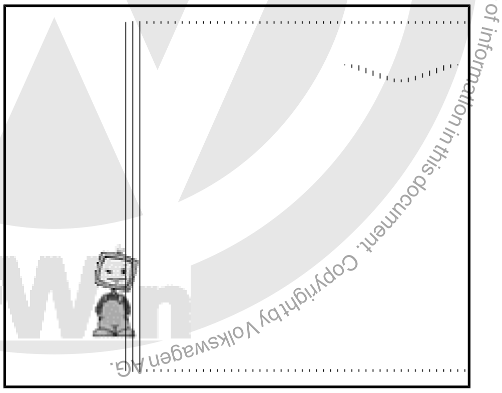
Note

- *When using an “Original Replacement Part Kit”, determine if it is necessary for technical reasons to use all the parts that come in the kit.*
- *If it is necessary to replace more parts than what is technically required, always inform the customer before performing the repair.*

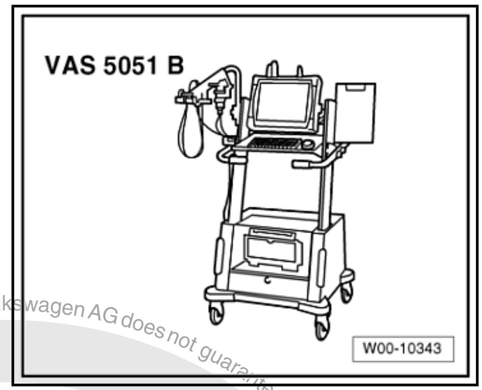
3.4 Vehicle Diagnostic Tester , Connecting

Special tools and workshop equipment required

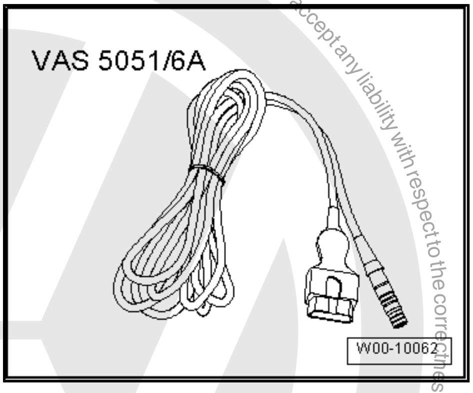
- Vehicle Diagnostic Tester



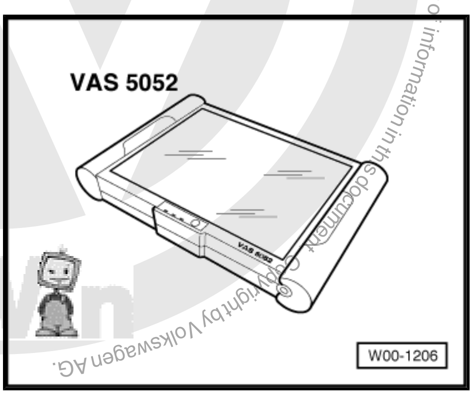
- Vehicle Diagnostic Tester


VAS 5051 B
W00-10343

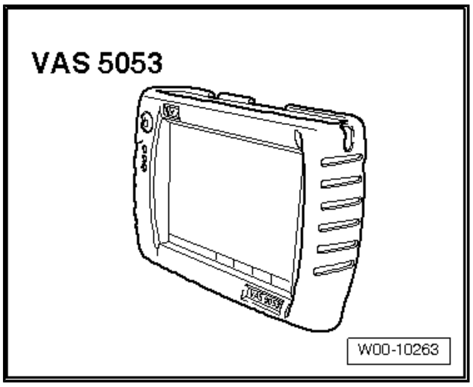
- Diagnostic Cable


VAS 5051/6A
W00-10062

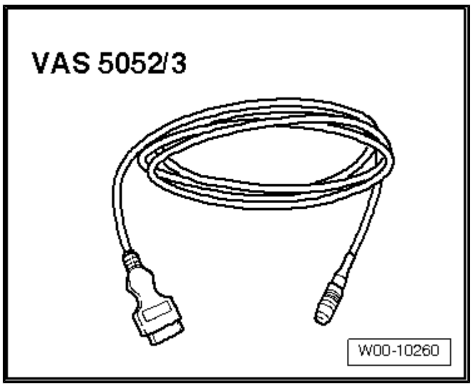
- Vehicle Diagnostic Tester or subsequent unit.


VAS 5052
W00-1206

- Vehicle Diagnostic Tester


VAS 5053
W00-10263

- Vehicle Diagnostic Tester



Note

Make sure the selected Vehicle Diagnostic Tester is only used with the accompanying diagnostic cable.

WARNING

- ***During a road test you must always secure testing and measuring equipment on the back seat.***
- ***Drivers must NEVER operate these tools while driving.***

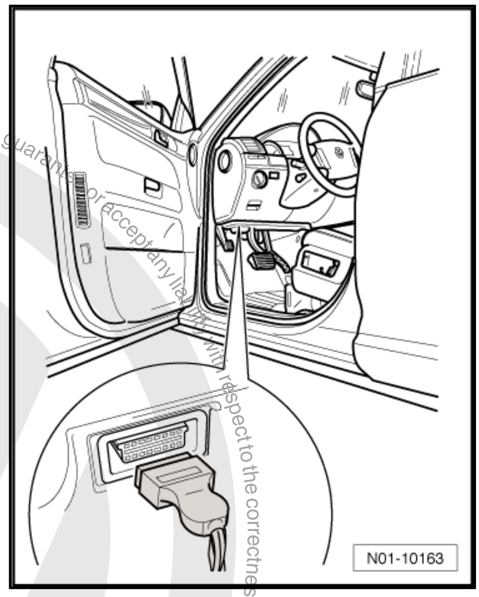
– Perform the following:

– Connect diagnosis cable connector to data link connector.

– Switch on the Vehicle Diagnostic Tester.

– Switch on the ignition.

Follow the instructions appearing on the screen to start the desired functions.



3.5 Vehicle Identification Number

⇒ “3.5.1 VIN on Lower Edge of Windshield ”, page 17

⇒ “3.5.2 VIN on Longitudinal Member Extension”, page 17

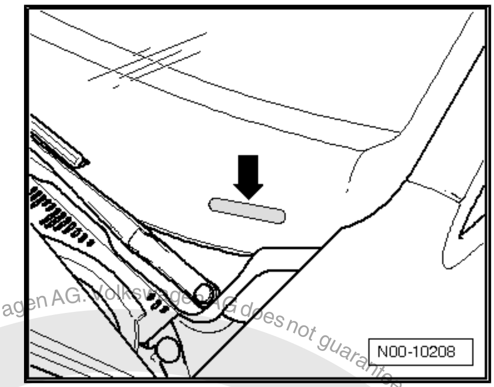
⇒ “3.5.3 VIN on Suspension Strut Mount”, page 17

3.5.1 VIN on Lower Edge of Windshield

Note

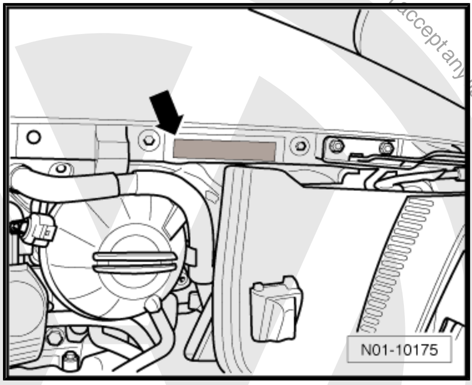
The VIN can be located in various places on the vehicle depending on vehicle equipment.

The VIN -arrow- in on the left side of the vehicle in the windshield, in the area of the windshield wiper mount. It is visible from outside.



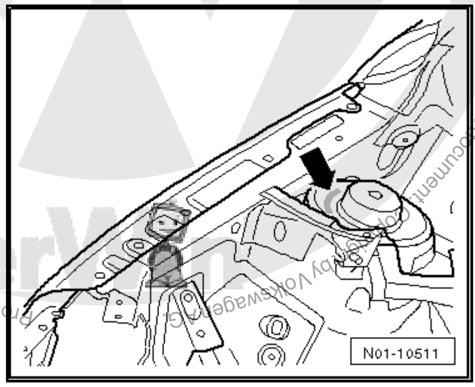
3.5.2 VIN on Longitudinal Member Extension

The Vehicle Identification Number (VIN) is located on the longitudinal member extension -arrow-.



3.5.3 VIN on Suspension Strut Mount

The VIN is located on the right front suspension strut mount -arrow-.



3.5.4 Decoding VINs

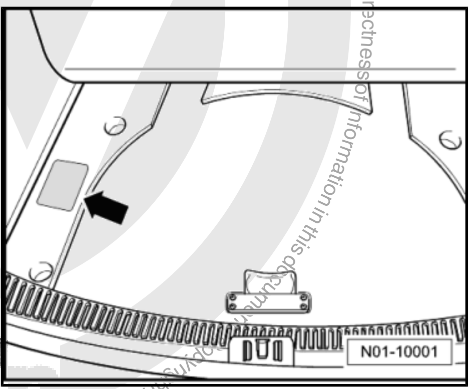
WVW	ZZZ	1K1 1)/5M1 2)	Z	4	W	000 234. Refer to .
Manufacturer code	Filler character	Type	Filler character	MY 2004	Producing Factory	Serial number

1) Golf from MY 2004

2) Golf Plus from MY 2005

3.6 Vehicle Data Label

The vehicle data label -arrow- is located in the spare wheel well on the left side. The vehicle data label is also inside the customer Maintenance booklet.



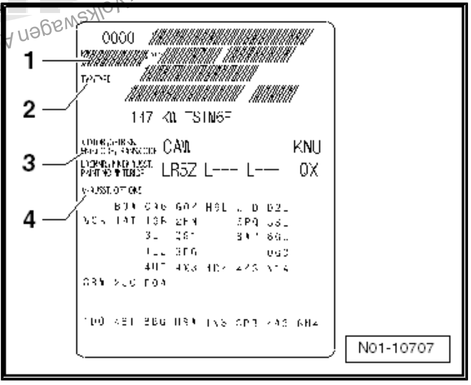
The label contains the following vehicle data:

1 - VIN

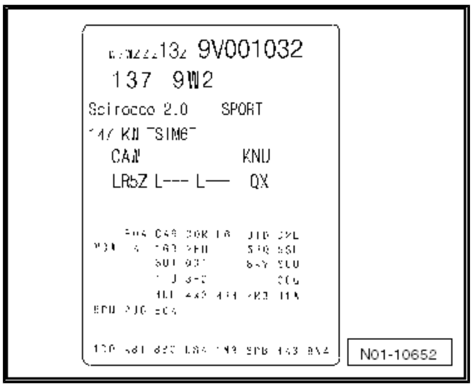
2 - Vehicle model, engine output, transmission

3 - Engine and transmission codes, paint code, interior equipment

4 - Optional equipment, PR numbers


1
2
3
4
0000
117 kW TSI
CAM KNU
LR5Z L--- L--- 0X
N01-10707

The label inside the customer Maintenance booklet contains the same information. The legend is under the label.


9V001032
137 9W2
Scirocco 2.0 SPORT
CAM KNU
LR5Z L--- L--- 0X
N01-10652

3.7 Severe Operating Conditions

Under severe operating conditions, it is necessary to have some work performed before the next service is due or between specified Service Intervals.

Severe Operating Conditions

- Constant short-distance driving or stop-and-go driving in the city

- High proportion of cold starts
- Operating the vehicle in areas with extremely low temperatures for an extended period of time
- Frequently running at idle for extended periods of time (e.g. a taxi)
- Frequently driving full throttle or with a high load or a trailer
- Running with diesel fuel with high sulfur content
- Frequently operating in areas with excessive dust

3.8 Engine Code and Engine Number

Note

Four-digit engine codes have been introduced beginning with the letter “C”. The first 3 digits describe the mechanical engine structure and are still stamped on the engine as before. The fourth digit describes the engine output and torque and depends on the engine control module.

Engine code and engine number are found:

- ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 00
- on vehicle data label. Refer to ⇒ “3.6 Vehicle Data Label”, page 18 .

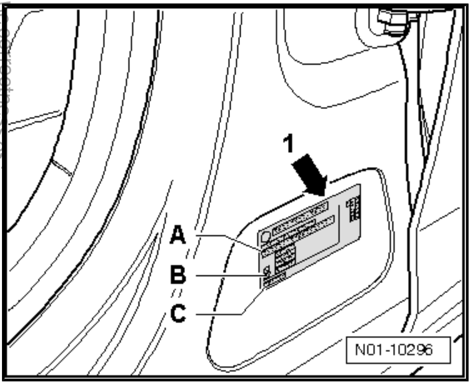
3.9 Type Plate

Note

Vehicles for some countries do not have a type plate.

4-door Vehicles

Type plate -arrow 1- can be seen after opening left front door, in lower area of B-pillar.



The label contains the following vehicle data:

A - Vehicle Identification Number

B - Axle load

C - Type identification number

2-door Vehicles

Type plate is visible after opening right door on door beam at bottom.

4 Procedure Descriptions

⇒ “4.1 Ball Joints, Visual Inspection”, page 23

⇒ “4.52 Front and Rear Final Drive, Checking Oil Level”, page 113

⇒ “4.2 Automatic Headlamps and Cornering Lamp, Checking Function”, page 23

⇒ “4.3 Automatic Transmission 09G, Checking ATF Level”, page 24

⇒ “4.4 Automatic Transmission 09G Transmission, Changing ATF”, page 24

⇒ “4.5 Battery Terminals, Checking for Secure Fit”, page 24

⇒ “4.6 Battery, Checking with Battery Tester VAS5097A or Battery Tester VAS6161 ”, page 28

⇒ “4.7 Tires, Checking Condition, Tire Wear Pattern, Tire Pressure, Tread Depth and Age”, page 29

⇒ “4.8 Brake and Clutch System, Brake Fluid, Changing”, page 32

⇒ “4.9 Brake Fluid Level, Checking”, page 36

⇒ “4.10 Brake System and Shock Absorber, Checking for Leaks and Damage”, page 37

⇒ “4.11 Brake Pads, Front and Rear, Checking Thickness”, page 38

⇒ “4.12 6-Speed DSG Transmission, Changing DSG Transmission Fluid and Filter”, page 40

⇒ “4.13 Power Windows, Checking”, page 40

⇒ “4.14 Performing Vehicle System Test”, page 41

⇒ “4.15 Hood, Lubricating Hook”, page 42

⇒ “4.16 Protective Joint Boots, Visual Inspection”, page 42

⇒ “4.24.3 Engine Cover Rubber Buffers, Removing and Installing”, page 60

⇒ “4.17 Haldex Clutch, Golf 4MOTION, Changing Oil”, page 43

⇒ “4.18 Inner and Outer Body, Checking for Corrosion”, page 47

⇒ “4.20 Ribbed Belt, Checking”, page 48

⇒ “4.19 Ribbed Belt, Tension, Adjusting, Engines without Automatic Tensioner”, page 47

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⇒ “4.22 Coolant System, Check Freeze Protection and Coolant Level”, page 49

⇒ “4.23 Air Filter, Cleaning Housing and Removing and Installing Air Filter”, page 51

⇒ “4.24 Upper Engine Cover, Removing and Installing”, page 58

⇒ “4.25 Lower Engine Compartment Cover, Removing and Installing”, page 62

⇒ “4.26 Engine and Engine Compartment Components, Checking for Leaks and Damage.”, page 62

⇒ “4.27 Engine Oil Level, Checking”, page 63

⇒ “4.28 Engine Oil, Draining or Extracting and Filling, Replacing Oil Filter”, page 64

⇒ “4.29 Road Test”, page 68

⇒ “4.30 Wheel Bolts, Tightening Specifications”, page 69

⇒ “4.32 Radio and Radio Navigation System, Entering PIN for Anti-Theft Code and Assign Local Radio Stations”, page 71

⇒ “4.31 Radio Code, Checking with Vehicle Diagnostic Tester ”, page 71

⇒ “4.33 Tire Pressure Monitoring System: Perform Basic Setting”, page 72

⇒ “4.34 Tire Repair Kit, Checking Bottle for Damage or Usage, Check and Entering Tire Sealant Expiration Date”, page 74

⇒ “4.35 Dust and Pollen Filter, Cleaning Housing and Removing and Installing Filter”, page 75

⇒ “4.36 Headlamps, Checking and Adjusting”, page 75

⇒ “4.37 Service Interval Display, Resetting”, page 84

⇒ “4.38 Service Interval Display, Recoding”, page 86

⇒ “4.39 Sunroof, Checking Function, Cleaning and Lubricating Guide Rails”, page 87

⇒ “4.40 Sunroof Water Drains, Checking and Cleaning”, page 87

⇒ “4.41 Windshield and Headlamp Washer System, Checking Function”, page 89 .

⇒ “4.42 Windshield Wiper Protectors, Removing”, page 93

⇒ “4.44 Tie Rod Ends, Checking Play, Security and Joint Boots”, page 97

⇒ “4.45 Door Arrester, Lubricating”, page 97

⇒ “4.46 Transport Mode, Deactivating”, page 98

⇒ “4.47 Transport Protection, Removing Locking Pieces from Front Axle Struts”, page 99

⇒ “4.48 Underbody, Underbody Components, Checking for Damage”, page 100

⇒ “4.49 Clock and Date, Setting”, page 100

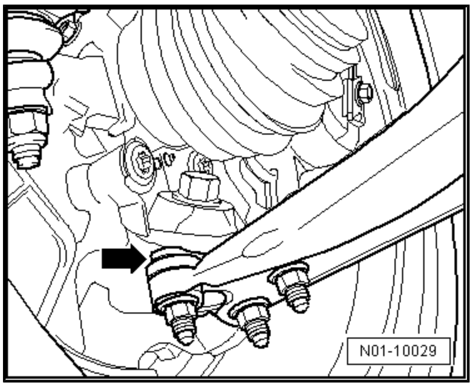
⇒ “4.50 Camshaft Drive Toothed Bet, 2.0L FSI and TFSI Only, Removing and Installing”, page 101

⇒ “4.51 Spark Plugs, Replacing”, page 101

⇒ “4.2 Automatic Headlamps and Cornering Lamp, Checking Function”, page 23

4.1 Ball Joints, Visual Inspection

- – Check ball joint boots - arrow- for leaks and damage.



4.2 Automatic Headlamps and Cornering Lamp, Checking Function

⇒ “4.2.1 Automatic Head Lamp Control, Checking”, page 23

⇒ “4.2.2 Static Cornering Lamp, Checking ”, page 24

4.2.1 Automatic Head Lamp Control, Checking

Note

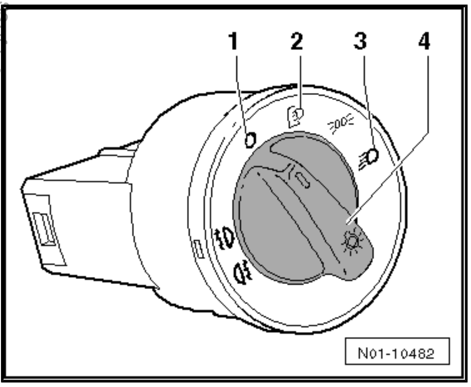
Automatic headlamps are also called Automatic Head Lamp Control.

- Vehicle must be in daylight.

Checking in Daylight or Brightness

- – Switch on the ignition.
- – Turn the headlamp switch - 4- to the automatic headlamps position - 2-.

The headlamp should not come on when it is bright.

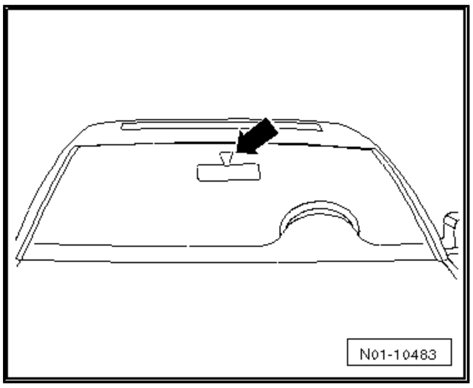


Checking at Night or in Darkness

- Ignition is switched on
- Light switch is on automatic headlamps

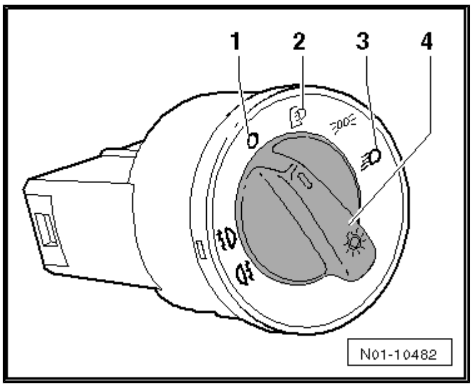
Rain/Light Recognition Sensor - G397- is secured to rearview mirror bracket.

Rain/Light Recognition Sensor - G397- is located in upper center area of front windshield - arrow-.



- – Cover area where rearview mirror is secured with hand or suitable object from outside of windshield - arrow-.

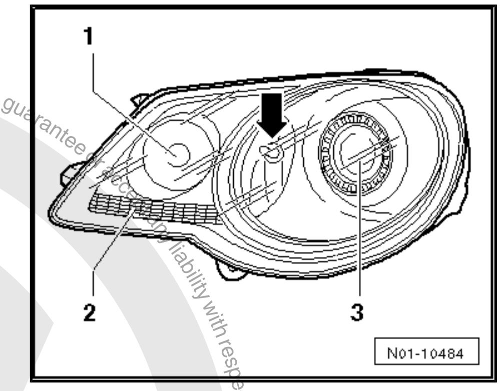
The decrease in light is measured and the headlamps are switched on.



– Turn the headlamp switch - 4- to the “ O” position - 1- and then switch off the ignition.

4.2.2 Static Cornering Lamp, Checking

- Vehicle parked, steering wheel in straight ahead position



Note

♦ *Vehicles with cornering light can be recognized by an additional reflector - arrow- between the turn signal - 1- and low beam module - 3-.*

♦ *The static cornering light only functions in conjunction with the low beams.*

– Turn on the low beam or the automatic headlamps.

– Turn steering wheel one turn to the right out of straight position and check in right headlamp whether cornering light bulb comes on.

– Turn steering wheel one turn to the left out of straight position and check in left headlamp whether cornering light bulb comes on.

Cornering light must go out when steering wheel is in straight position.

4.3 Automatic Transmission 09G, Checking ATF Level

– Refer to ⇒ Automatic Transmission; Rep. Gr. 37 ; Description and Operation

4.4 Automatic Transmission 09G Transmission, Changing ATF

Checking and Changing, refer to ⇒ Automatic Transmission; Rep. Gr. 37 ; Description and Operation

Note

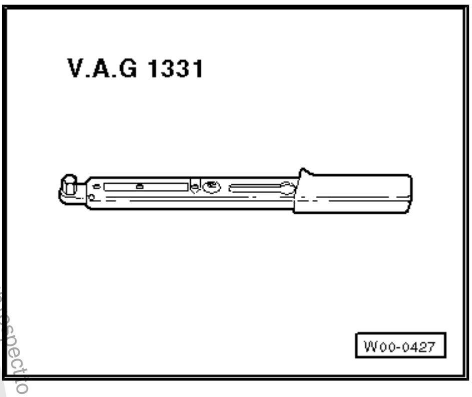
The transmission ATF must also be replaced in countries with a very hot climate. The ATF wears down in these climate conditions. All countries affected are listed in the table below.

The United States of America is considered a hot climate country.

4.5 Battery Terminals, Checking for Secure Fit

Special tools and workshop equipment required

- Torque Wrench 5-50Nm - VAG1331-



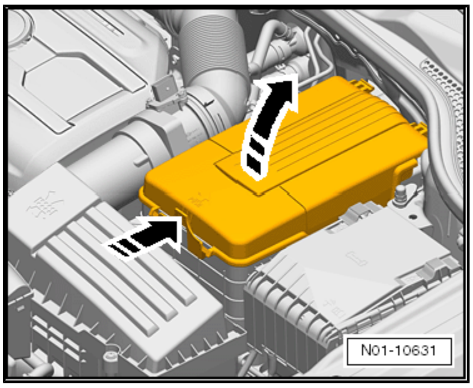
Note

- *Tight battery connections assure trouble-free battery function and long service life.*
- *Make sure the battery connections are completely on the battery terminal.*

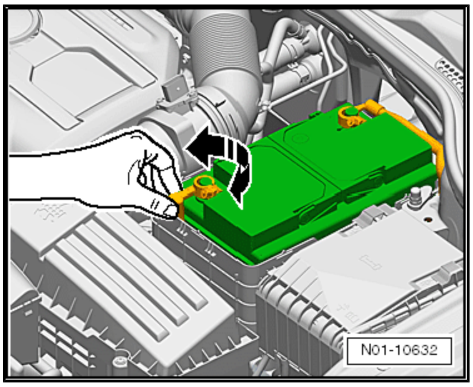
Battery inEngine Compartment

Perform the following:

– Open the battery cover, if equipped.



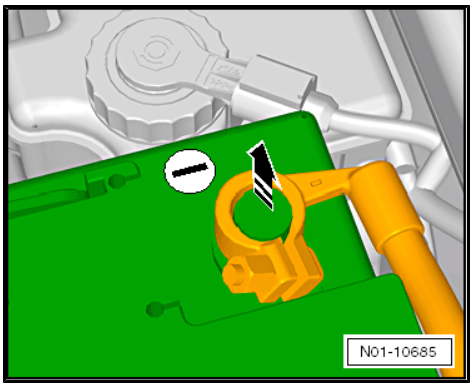
– Move the positive and negative battery terminals back and forth to make sure they are securely attached.



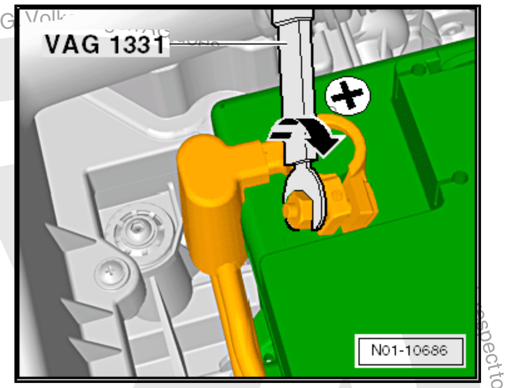
> ⚠ WARNING
>
> *If battery positive (B+) connection is loose, disconnect ground (GND) cable first before attempting to remove or tighten plus connection, to prevent personal injury.*

If the Battery Clamp on Positive Terminal is NOT Seated Securely:

– Loosen and remove the - MINUS- battery terminal.

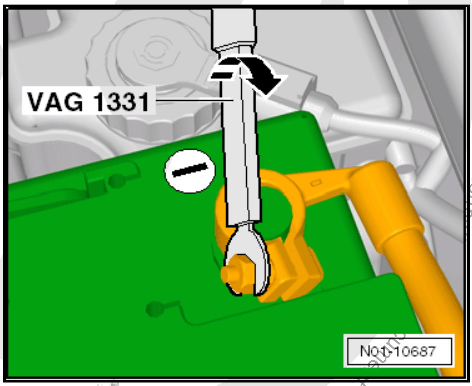


– Tighten the - PLUS (+)- battery terminal using the Torque Wrench 5-50Nm - VAG1331- and Torque Wrench 1331 Insert - Reversible Ratchet - V.A.G. 1331/1- to 6Nm.

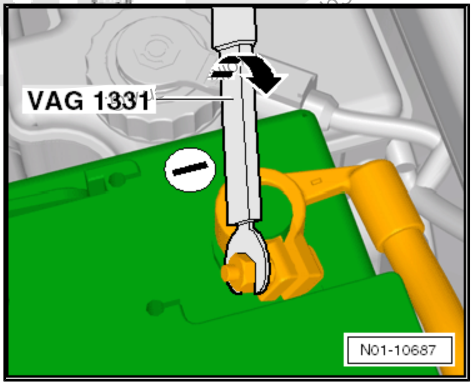


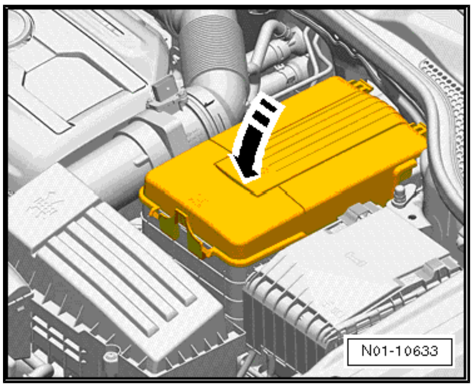
– Connect the - MINUS (-)- terminal and tighten using the Torque Wrench 5-50Nm - VAG1331- and Torque Wrench 1331 Insert - Reversible Ratchet - V.A.G. 1331/1- to 6Nm.

If Ground Connection on Battery is NOT Tight:



– Tighten the - MINUS (-)- terminal using the Torque Wrench 5-50Nm - VAG1331- and Torque Wrench 1331 Insert - Reversible Ratchet - V.A.G. 1331/1- to 6Nm.





– Install the cover, if equipped.

After connecting the battery, perform the following:

Procedure

Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Removing and Installing . → Battery, Disconnecting and Connecting → Battery, Connecting → Complete the steps after connecting the battery

For technical reasons it is possible the links do not go to the correct chapter. If that is the case, please look up the procedure manually.

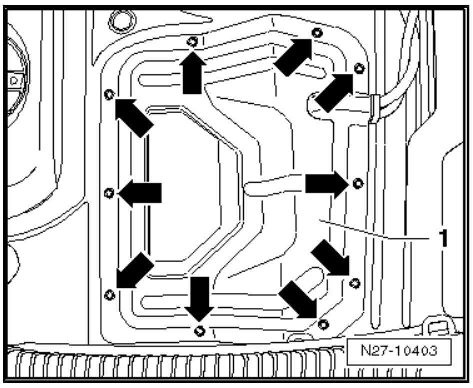
Battery Inside Luggage Compartment

Perform the following:

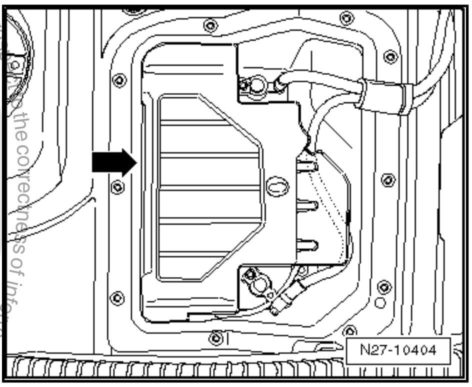
– Raise the luggage compartment floor and secure it with the tool.

– Remove the right luggage compartment floor filler piece with the available tool.

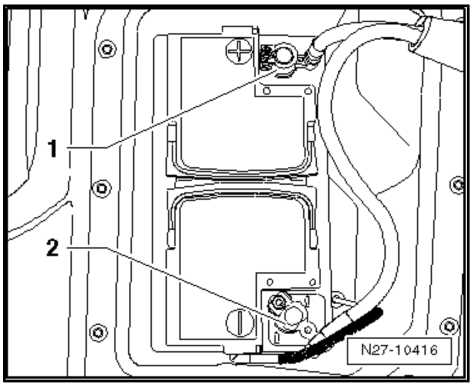
The battery compartment cover is visible.



– Remove the ten bolts with multi-point socket heads - arrows- and remove the battery compartment cover - 1-.



– Removed the molded part - arrow-.



– Move the battery negative wire - 2- and positive wire - 1- back and forth to see if the battery clamps are secure on the battery terminals.

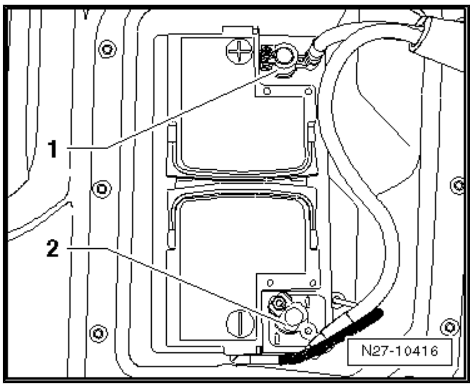
⚠ WARNING

If battery positive (B+) connection is loose, disconnect ground (GND) cable first before attempting to remove or tighten plus connection, to prevent personal injury.

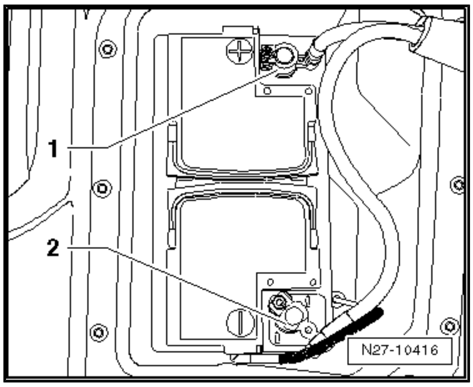
If the battery clamp on positive terminal is not seated securely:

- First disconnect the battery clamp - 2- at the battery negative terminal.
- Tighten the battery positive terminal - 1- to 6 Nm.
- Connect the battery clamp - 2- to the battery negative terminal and tighten it to 6 Nm.

If ground connection on battery is not tight:



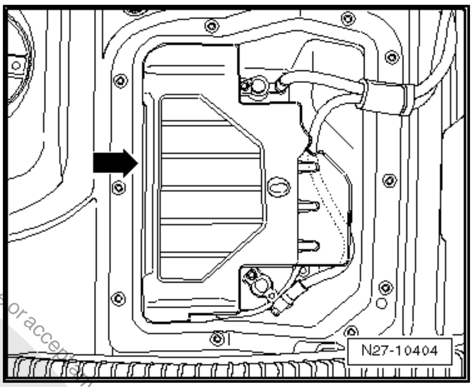
- Tighten the battery clamp - 2- on the battery negative terminal to 6 Nm.



- Reinstall the molded part - arrow-.
- Install the battery compartment cover and tighten the ten multi-point socket head bolts.

(M6 x 16) to 10 Nm.

- Place the right luggage compartment floor filler piece in the correct location with the tool available and fold the floor covering back.



Note

Complete the work after connecting the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Removing and Installing Battery, Connecting.

4.6 Battery, Checking with Battery Tester - VAS5097A - or Battery Tester - VAS6161-

Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Removing and Installing Battery, Checking.

4.7 Tires, Checking Condition, Tire Wear Pattern, Tire Pressure, Tread Depth and Age

⇒ “4.7.1 General Information”, page 29

⇒ “4.7.2 Tires, Checking Condition”, page 30

⇒ “4.7.3 Tires, Checking Wear Pattern”, page 30

⇒ “4.7.4 Tires Including Spare Wheel, Checking”, page 30

⇒ “4.7.5 Tire Pressures, Golf from MY 2004”, page 30

4.7.1 General Information

WARNING

- *For safety reasons, all tires on the vehicle should be of the same make and tread design. Approved wheel/tire combinations, for example, refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; General Information*
- *AWD vehicles must have tires of the same make and tread design. If not, the center differential could get damaged.*

Note

- *The tire pressures for relevant model are found on a sticker. This sticker is on the inside of the fuel filler door or on the B-pillar.*
- *Observe that the inflation pressure specifications on the sticker refer to the air pressure of cold tires. Do not reduce tire pressure when the tires are warm.*
- *Adapt tire pressure corresponding to load.*
- *If the tire pressure for the spare wheel is not listed, then fill the spare wheel with the highest tire pressure specified for the vehicle.*
- *On vehicles with tire pressure monitoring display, make sure that a basic setting is performed after each pressure adjustment. Refer to ⇒ “4.33 Tire Pressure Monitoring System: Perform Basic Setting”, page 72 .*

Winter Tires

Note

- *Important information regarding recommended winter tires can be found in ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; General Information*
- *If winter tires are mounted, a label informing the customer of the speed limit must be affixed inside the passenger compartment so that it is clearly visible.*
- *On winter tires, the tire pressure must no longer be increased. But this is true only if the winter tires being used are the exact same size as the standard summer tire, and the speed index does not exceed “ H”. If you deviate from this, then you must follow the tire manufacturer recommendations.*

Note

For technical reasons it is possible the links do not go to the correct chapter. If that is the case, please look up the procedure manually.

4.7.2 Tires, Checking Condition

WARNING

If damage is discovered, the tire must be examined to determine whether a new one must be installed.

Tests during Delivery Inspection:

– Check tire tread and side walls for damage, if necessary remove any foreign bodies, such as nails or screws.

Checks during a Service

– Check tire tread and side walls for damage, if necessary remove any foreign bodies, such as nails or screws.

– Check tire treads for cupping, feathering, one-sided tread wear, porous side walls, cracks, cuts, and rim damage.

4.7.3 Tires, Checking Wear Pattern

The wear pattern of the front wheels can be used to assess whether a check of the track and camber is necessary:

♦ Feathered edges of the treads may indicate faulty toe adjustment.

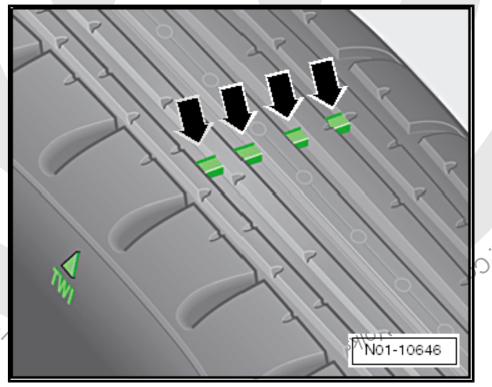
♦ One-sided tread wear is mostly caused by faulty camber.

If such wear patterns are found, determine the causes by checking the wheel alignment (repair measure).

4.7.4 Tires Including Spare Wheel, Checking

– Check tread depth

Minimum tread depth: 1.6 mm



Note

♦ *This value may vary for individual countries due to different legislative regulations.*

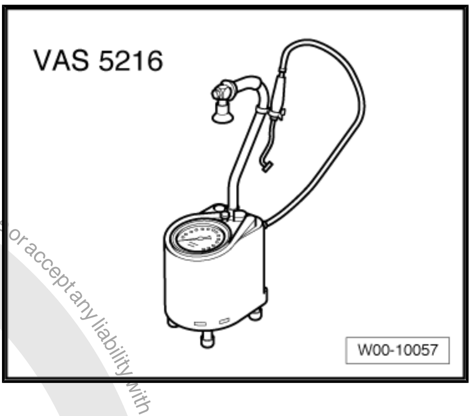
♦ *The minimum tread depth is reached when the tires have worn down level with the 1.6 mm high tread wear indicators - arrows- positioned at intervals around the tire.*

♦ *If the tread wear is close to the wear limits, inform customer and note findings on the repair order.*

4.7.5 Tire Pressures, Golf from MY 2004

Special tools and workshop equipment required

- Tire Inflation Device - VAS5216-



Note

The required tires pressures for the relevant model are on a sticker attached to the inside of fuel filler flap, or on driver side B-pillar.

Checking, correcting inflation pressures using Tire Inflation Device/Tire Filler Unit - VAS5216- if necessary.

Gasoline engines		Tire pressures, Golf from MY 2004		
	Half load bar/psi		Full load bar/psi	
Output	Front	Rear	Front	Rear
1.4L/55 kW, 59 kW, 66kW and 90 kW	2.0/29	2.0/29	2.3/33	2.8/40
1.4L /103 kW	2.2/31	2.2/31	2.4/34	2.9/41
1.4L /125 kW	2.3/33	2.3/33	2.5/36	3.0/43
1.6L/75 kW and 85 kW	2.0/29	2.0/29	2.3/33	2.8/40
2.0L/110 kW	2.1/30	2.1/30	2.3/33	2.8/40
2.0L/147 kW and 169 kW	2.4/34	2.4/34	2.6/37 (not USA and Canada)	3.0/43 (not USA and Canada)
2.0L/147 kW and 169 kW 225/45 R17 91H	2.3/33	2.3/33	---	---
2.0L/147 kW and 169 kW 225/40 R18 92H (XL)	2.6/38	2.6/38	---	---
2.5L/110 kW and 125 kW	2.3/34	2.3/34	---	---
2.5L/110 kW and 125 kW only 225/40 R18 92H (XL)	2.6/38	2.6/38	---	---
2.0L/110 kW 4MOTION	2.2/31	2.2/31	2.4/34	2.9/41
2.0L/147 kW 4MOTION	2.3/33	2.3/33	2.5/36	3.0/43
3.2L / 184 kW	2.8/40	2.8/40	3.0/43	3.2/47
Spare wheel (collapsible spare wheel)	4.2/60			

4.8 Brake and Clutch System, Brake Fluid, Changing

⇒ “4.8.1 Application Information and Safety Precautions”, page 32

⇒ “4.8.2 Brake Fluid Specifications”, page 32

⇒ “4.8.3 Brake Fluid, Changing”, page 32

4.8.1 Application Information and Safety Precautions

Note

- *A new brake fluid had been used since MY 2006.*
- *The new brake fluid can also be used in older vehicles.*
- *New brake fluid can be mixed with previous brake fluid.*

WARNING

- *Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Oils containing minerals damage seals and sleeves on brake systems.*
- *Brake fluid is poisonous. Do not let brake fluid come in contact with the paint.*
- *Brake fluid is hygroscopic, which means that it absorbs moisture from the air. Always store brake fluid in air-tight containers.*
- *Wash off any spilled brake fluid with plenty of water.*
- *Do not reuse used / extracted brake fluid!*
- *Follow all disposal regulations.*

4.8.2 Brake Fluid Specifications

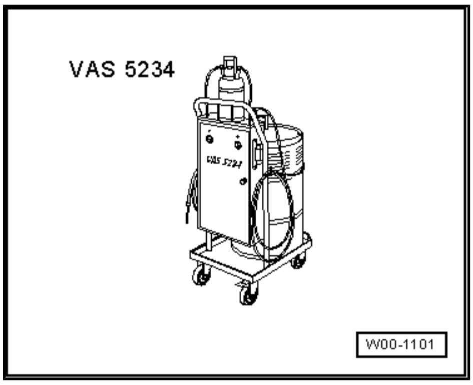
Permitted specifications:

- Brake fluid corresponding to US standard FMVSS 116 DOT 4 (previous brake fluid).
- Brake fluid conforming to VW norm VW 501 14 (new brake fluid).

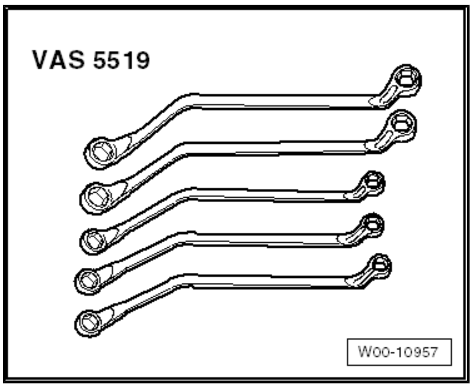
4.8.3 Brake Fluid, Changing

Special tools and workshop equipment required

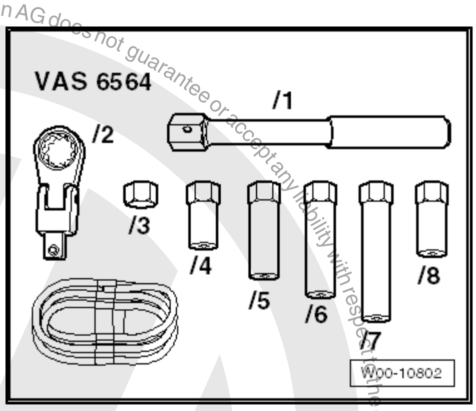
- Brake Charger/Bleeder Unit - VAS 5234-


VAS 5234
W00-1101

- Wrench - Brake Bleeder Set - VAS5519-


VAS 5519
W00-10957

- Brake Bleeding Tool Set - VAS6564-


VAS 6564
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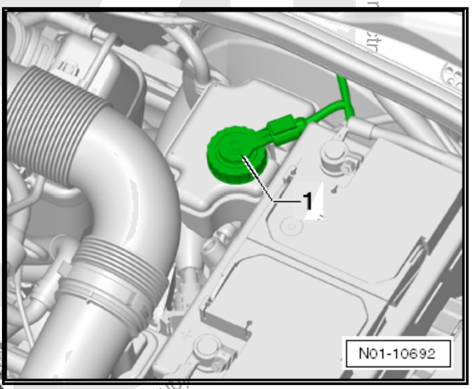
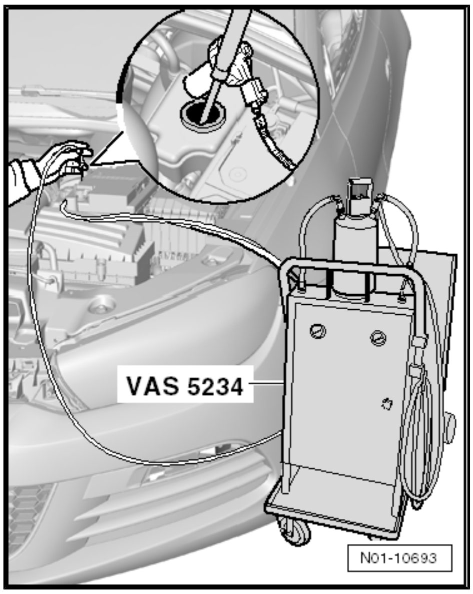
W00-10802

– Remove cap from brake fluid reservoir - 1-.



– Take the hose from the Brake Charger/Bleeding Unit - VAS5234- and extract as much brake fluid as possible.



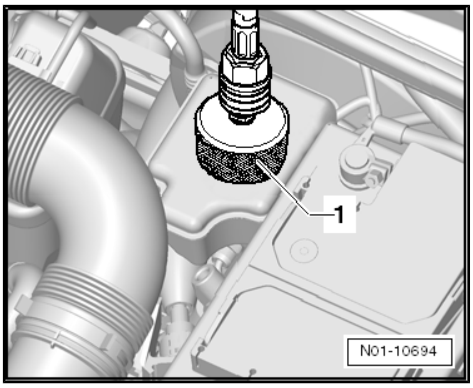
Note

Do not remove the strainer inside the brake fluid reservoir.

WARNING

Do not use extracted brake fluid again!

– Screw adapter - 1- onto brake fluid reservoir.



Observe the Operating Instructions for - VAS5234- !

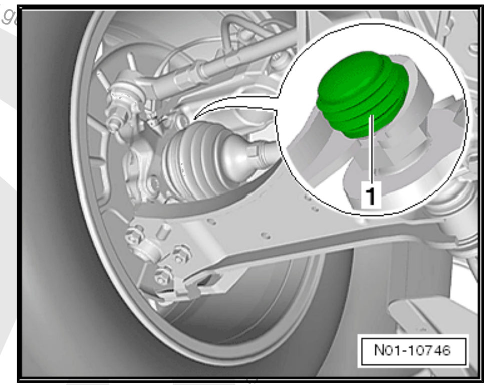
– Set the correct pressure on the Brake Charger/Bleeding Unit - VAS5234- : Suspension, Brake Systems ⇒ Brake Systems; Rep. Gr. 47 ; General Information → Brake System, Bleeding.

– Connect the filler hose on the Brake Charger/Bleeder Unit - VAS5234- to the adapter - 1-.

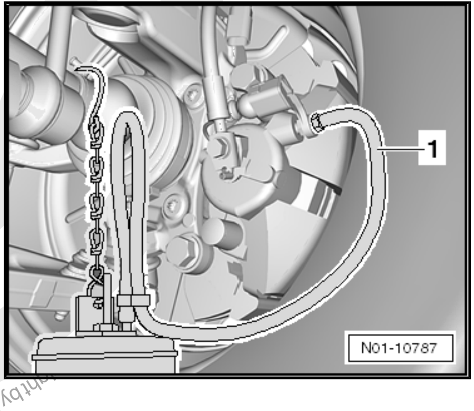
Note

Use a suitable bleed hose. It must seat tightly on the bleed valve so that no air can get into the brake system.

– Remove the bleed valve cap - 1- on the left front brake caliper.



– Connect collector bottle bleed hose - 1- to left front bleed valve. Then open the bleed valve and allow the corresponding quantity to flow out (see table). Close the bleed valve. Torque, refer to ⇒ Brake Systems; Rep. Gr. 47 ; Specifications

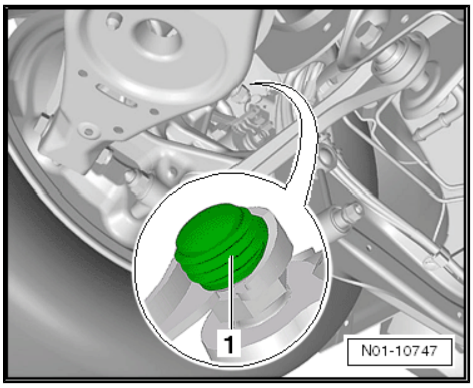


– Install the cap on the left front brake caliper bleed valve.

Repeat work procedure on right side of vehicle at front.

– Remove both rear wheels to access the bleed valve.

– Remove the cap - 1- on the left rear brake caliper bleed valve.

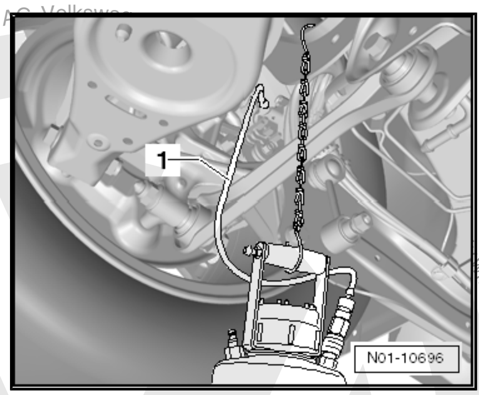


– Connect the collector bottle bleed hose - 1- to the left rear bleed valve.

– Open the bleed valve and let the corresponding amount of brake fluid (see table) flow out. Close the bleed valve. Torque, refer to ⇒ Brake Systems; Rep. Gr. 47 ; Specifications .

– Install the cap on the left rear brake caliper bleed valve.

– Repeat work procedure on right side of vehicle at rear.



for Manual Transmission Vehicles

Remove the air filter housing. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Removal and Installation

– Attach the bleeder hose to the bleeder valve - arrow- on the clutch slave cylinder - 1-.

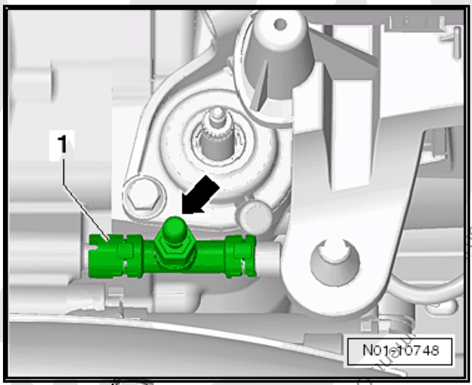
– Open valve and allow about 50 ml of brake fluid to flow out.

– Close the valve and depress the clutch pedal rapidly 10 to 15 times.

– Open valve again and allow about 50 ml of brake fluid to flow out.

– Close valve, remove bleeder hose and press clutch pedal several times.

– Install air filter housing in reverse order.



Sequence/Brake Fluid Quantity

Sequence bleed valves:	Amount of brake fluid, which must flow out of the bleed valves:
Brake caliper	
left front	0.20 liter
right front	0.20 liter
Brake wheel cylinder/brake caliper	
Left rear	0.30 liter
Right rear	0.30 liter
Clutch slave cylinder	0.10 liter

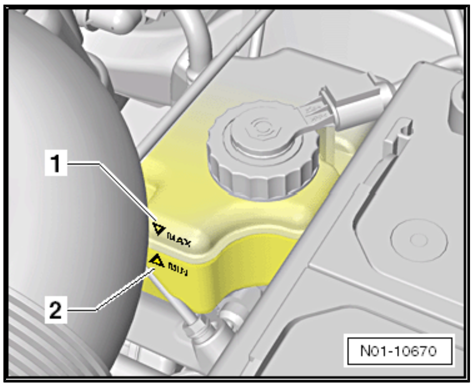
Total capacity: approximately 1.15 liter; including the amount extracted from the brake fluid reservoir

– Move filler lever on Brake Charger/Bleeding Unit - VAS5234- to “ B” (see operating instructions).

– Remove the filler hose from the adapter.

– Remove the adapter from the brake fluid reservoir.

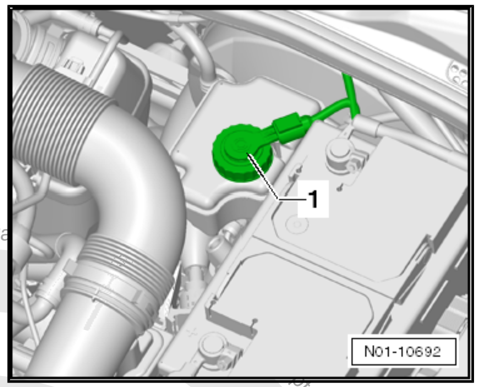
– Check brake fluid level and fill if necessary. It must be between - 1- and - 2-.



– Install the brake fluid reservoir cap - 1-.

– Mount the rear wheels, if necessary. Refer to ⇒ “4.30 Wheel Bolts, Tightening Specifications”, page 69 .

– Perform a function test during the test drive.



4.9 Brake Fluid Level, Checking

Brake fluid level at the delivery inspection:

Brake fluid level at inspection service:

> ⚠ WARNING
>
> *If brake fluid level is below MIN mark - 2-, check brake system (repair procedure), before adding brake fluid.*

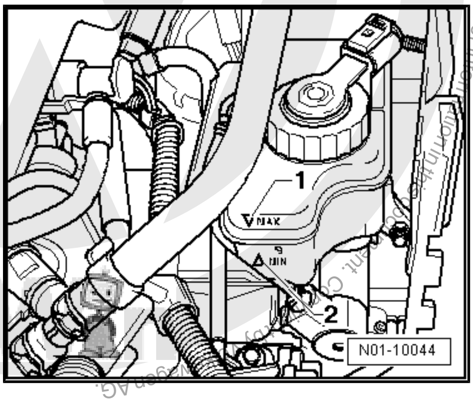
⇒ “4.8.1 Application Information and Safety Precautions”, page 32

⇒ “4.8.2 Brake Fluid Specifications”, page 32

⇒ “4.9.1 Brake Fluid, Checking Depending on Brake Pad Wear”, page 37

4.9.1 Brake Fluid, Checking Depending on Brake Pad Wear

Brake Fluid Level at the Delivery Inspection:



– At time of delivery inspection, brake fluid level must be at MAX mark - 1-.

Note

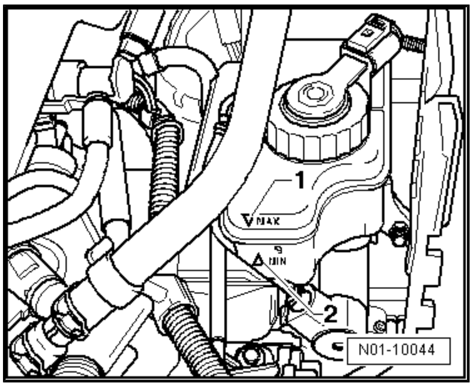
To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark - 1-.

Brake Fluid Level at Inspection Service:

Brake fluid level must always be evaluated depending on brake pad wear.

During operation of the vehicle, the brakes are automatically readjusted depending on wear of the brake pads. Because of the adjustment, brake fluid level will be slightly lower as a result.

- Recommended brake fluid level when brake pad wear limit has almost been reached:



“ At MIN marking and slightly above” - 2-: “ TOPPING OFF NOT NECESSARY”.

- Recommended brake fluid level, if brake pads are new or are far from the brake pad wear limit:

“ Between the MIN and MAX marks”.

4.10 Brake System and Shock Absorber, Checking for Leaks and Damage

Check the following components for leaks and damage:

- Brake master cylinder
- Brake booster (on anti-lock braking system: hydraulic unit)
- Brake pressure regulator
- Brake calipers
- Shock absorber (only during Inspection)
- Make sure the dust caps are on the brake fluid bleed valves.

– Make sure the brake hoses are not twisted.

– Turn steering to left stop and to right stop. During this operation no brake hose must touch any vehicle components.

– Check brake hoses for porosity and cracks.

– Check brake hoses for chafing.

– Check the brake line connections for leaks and corrosion and make sure they are attached securely.

⚠ WARNING

Correct any malfunctions (repair procedure).

4.11 Brake Pads, Front and Rear, Checking Thickness

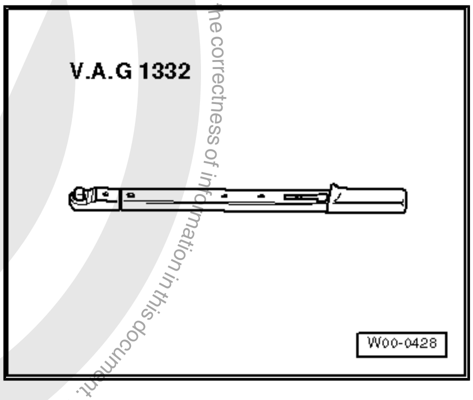
⇒ “4.11.1 Front Disc Brake Pads”, page 38

⇒ “4.11.2 Rear Disc Brake Pads”, page 39

4.11.1 Front Disc Brake Pads

Special tools and workshop equipment required

- Torque Wrench 5-50Nm - VAG1332-



- Flashlight and mirror

Perform the following:

The adapter for loosening and tightening of anti-theft wheel bolts is part of the vehicle tool kit. Refer to ⇒ “4.30 Wheel Bolts, Tightening Specifications”, page 69 .

– To be better be able to evaluate the remaining pad thickness, use a mirror and, if necessary, remove the tire to check the break wear indicator.

– Pull off wheel bolt covers if necessary. Refer to ⇒ “4.30 Wheel Bolts, Tightening Specifications”, page 69 .

– Mark installation position of wheel in relation to brake rotor.

– Remove wheel bolts and then the wheel.

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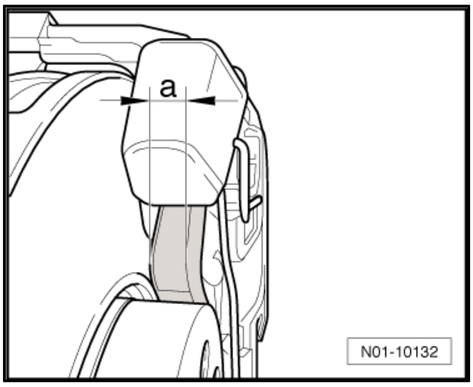


– Measure thickness of inner and outer brake pad.

a - Pad thickness “ without” backing plate

Wear limit: 2 mm

With pad thickness (not including backing plate) of 2 mm, the brake pads have reached their wear limit and must be replaced (repair procedure). Be sure to notify customer and mark findings on repair order!

Note

When replacing brake pads, it is absolutely necessary to check brake rotors for wear! Checking and replacing the brake pads, if necessary, is a repair measure.

– Check the brake rotor for wear. Refer to ⇒ Brake Systems; Rep. Gr. 46 ; Description and Operation .

– Install wheel in previously marked position.

– Tighten wheel bolts in diagonal sequence. Tightening torque, refer to ⇒ “4.30 Wheel Bolts, Tightening Specifications”, page 69 .

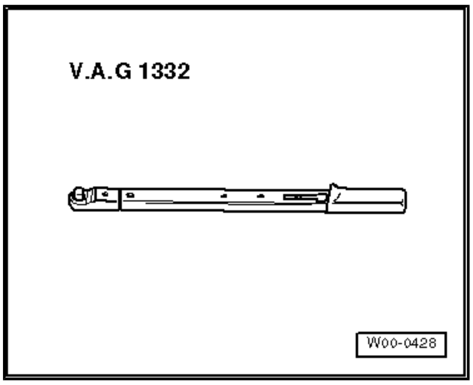
– Return the adapter to the vehicle tools.

– Pull off wheel bolt covers if necessary .

4.11.2 Rear Disc Brake Pads

Special tools and workshop equipment required

- Torque Wrench 5-50Nm - VAG1332-

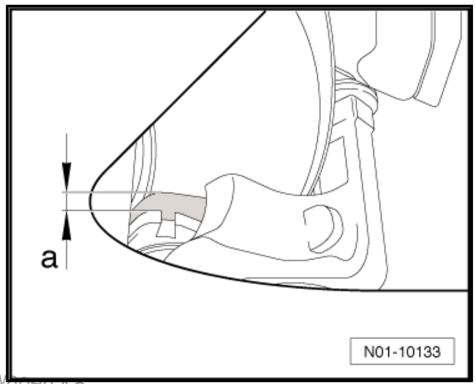


- Flashlight and mirror

Perform the following:

The adapter for loosening and tightening of anti-theft wheel bolts is part of the vehicle tool kit. Refer to ⇒ “4.30 Wheel Bolts, Tightening Specifications”, page 69 .

– Look through the opening with a flashlight and check the brake pads.



- Check thickness of outer pad visually.
- Shine a flashlight on the inner pad and hold up a mirror.
- Check thickness of inner pad visually.

a - Pad thickness inner and outer, not including backing plate

Wear limit: 2 mm

With pad thickness (not including backing plate) of 2 mm, the brake pads have reached their wear limit and must be replaced (repair procedure). Be sure to notify customer and mark findings on repair order!

Note

When replacing brake pads, it is absolutely necessary to check brake rotors for wear! Checking and replacing the brake pads, if necessary, is a repair measure.

- Check the brake rotor for wear: Suspension/brake system. Refer to ⇒ Brake Systems; Rep. Gr. 46 ; Description and Operation .

4.12 6-Speed DSG Transmission, Changing DSG Transmission Fluid and Filter

Note

The oil and filter do not need to be changed with the 7-speed DSG transmission 0AM.

- Refer to ⇒ Direct Shift Gearbox; Rep. Gr. 34 ; General Information .

4.13 Power Windows, Checking

Note

After disconnecting and reconnecting the battery, the power window one-touch up/one-touch down feature does not work. Therefore, the electric windows must be positioned again immediately, before a new vehicle is delivered. The vehicle battery must not be disconnected after the electric windows have been positioned.

WARNING

After disconnecting and reconnecting the battery, pinch protection of the power window regulators will not function. This can cause serious injuries if for example fingers are caught in the window!

Perform the following to position the power windows:

Note

The following work sequence is for the front left window. The positioning for the remaining windows is performed in the same manner using the respective switch in the driver door.

- Turn on the ignition
- Close all doors and windows.
- Hold left front side-window in position “ Close” by pulling and holding switch longer than 1 second.
- Lift button again for 1 second. Now when the button is pressed briefly the window will lower fully and when the button is lifted briefly the window will raise fully.
- Turn off ignition.

4.14 Performing Vehicle System Test

- Connect the Vehicle Diagnosis Tester Refer to ⇒ “3.4 Vehicle Diagnostic Tester , Connecting”, page 14 .
- Turn on the ignition
- Select operating mode “ Guided Fault Finding” on the display.
- Then perform vehicle identification on the Vehicle Diagnosis Tester .

Program now performs a vehicle system test automatically and checks for all possible control modules for this vehicle type.

- Press >.

Now all DTCs will be listed.

Note

- ♦ *It useful at this point to switch to Guided Functions to perform further work with the Vehicle Diagnosis Tester and avoid a second identification on the Vehicle Diagnosis Tester .*
- ♦ *To do so, press operating mode button and then Guided Functions.*
- ♦ *Refer to the corresponding work descriptions for the continued sequence.*
- ♦ *In order to return to Guided Fault Finding, press the operating mode button and then Guided Fault Finding.*

Caution

In every case, the vehicle must be released to the customer with the DTC memory erased.

Static Malfunctions

If one or more static malfunctions exist in the DTC memory, we recommend in agreement with the customer, that these malfunction be resolved with the help of Guided Fault Finding.

Sporadic Malfunctions

In the case that only sporadic malfunctions or notes are stored in DTC memory and the customer has no complaints in conjunction with an electronic vehicle system, erase the DTC memory.

- Press the Continue [>] button again to enter the test plan.
- Now end Guided Fault Finding via Go to button and then End.

All DTC memories will be checked now once more.

In the window now appearing, it will be confirmed that all sporadic DTCs were erased, diagnostic protocol is sent “ online” automatically.

Vehicle system test is completed.

4.15 Hood, Lubricating Hook

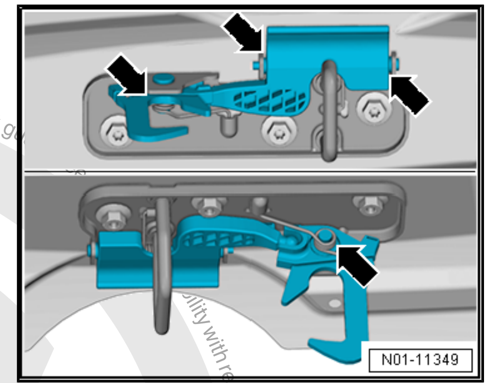
Special tools and workshop equipment required

- ♦ Universal oil spray G 000 115 A2

Note

Vehicle must be at least at room temperature.

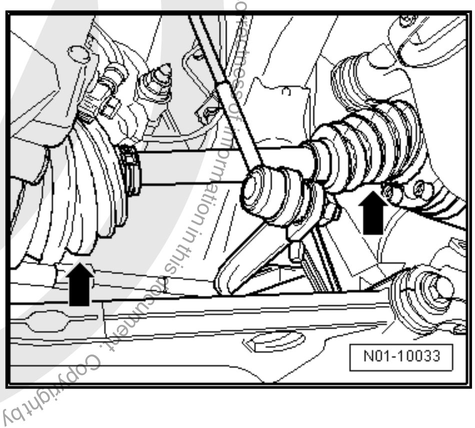
- Coat the hood safety catches with universal oil-Spray G 000 115 A2 at the marked positions - arrows-.
- Operate the moveable components several times to allow the universal oil to seep in.
- Remove any excess lubricant with a lint-free cloth.



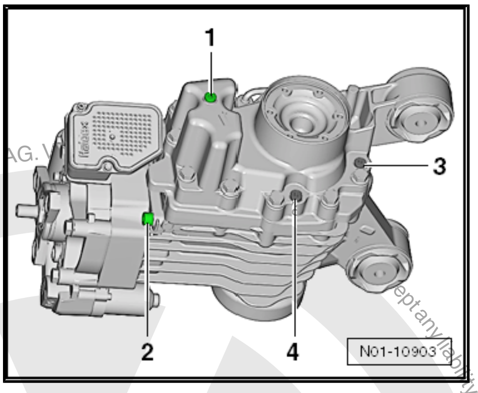
4.16 Protective Joint Boots, Visual Inspection

Perform the following:

- Check outer and inner CV joint boots - arrows- for leaks and damage.



4.17 Haldex Clutch, Golf 4MOTION, Changing Oil



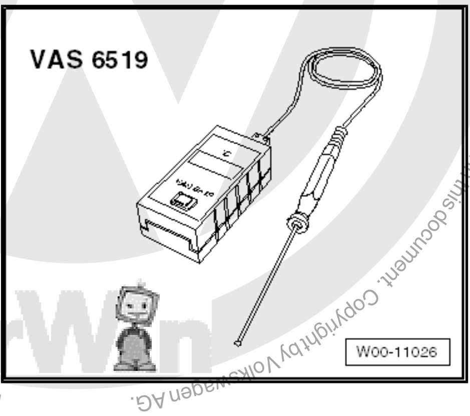
Note

- *On vehicles equipped with a Haldex clutch, the drain and sealing screws of both systems get interchanged due to the integrated housing. This results in unavoidable mistakes in maintenance and servicing, which can result in the Haldex clutch or the axle drive failing.*
- *The Haldex clutch and axle drive are a single unit with separate oil housings.*
- *- 1- Plug for filler hole for the Haldex oil.*
- *- 2- Drain plug for the Haldex oil.*
- *- 3- Plug for the filler hole for the axle oil.*
- *- 4- Drain plug for the axle oil.*

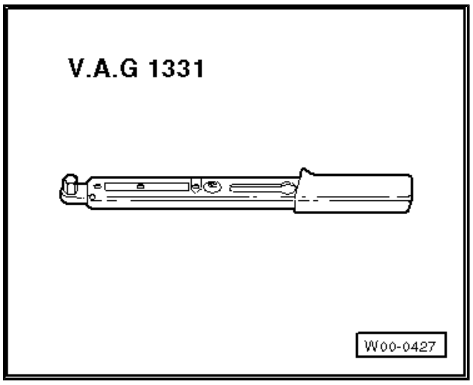
Drain plug allocation, refer to TPI 2017008

Special tools and workshop equipment required

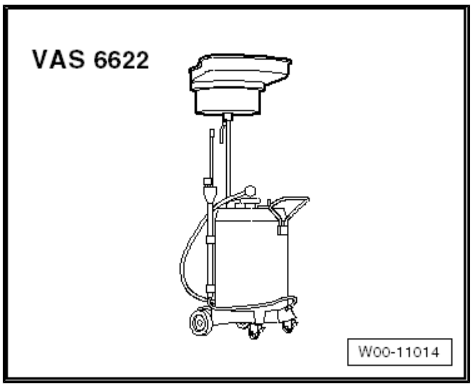
- Digital Thermometer - VAS6519-



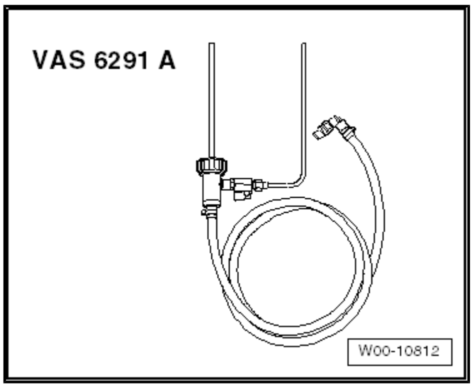
- Torque Wrench 5-50Nm - VAG1331-



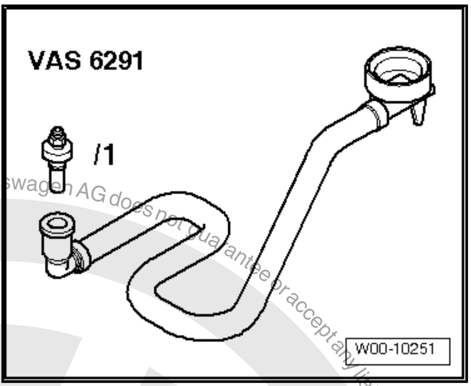
- Used Oil Collection and Extraction Unit - SMN372500-


VAS 6622
W00-11014

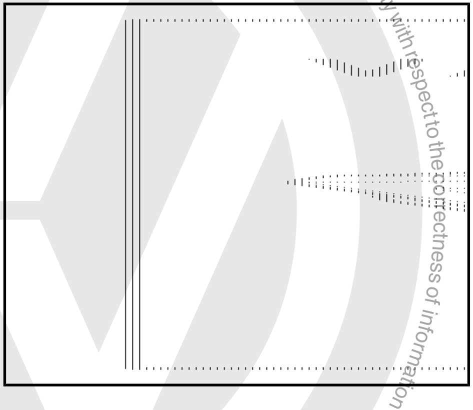
- Charging Device For Haldex Coupling 2 - VAS6291 A-


VAS 6291 A
W00-10812

- Oil Filling Adapter - VAS6291/1-

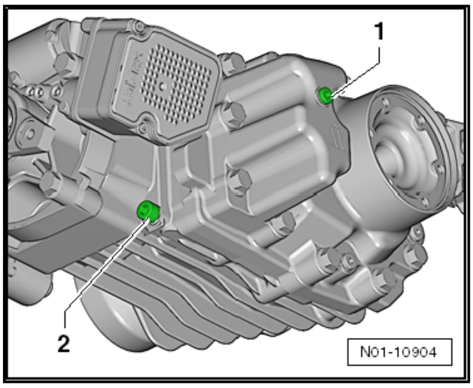

VAS 6291
/1
W00-10251

- Shop Crane - Drip Tray - VAS6208-



Oil Draining:

- Raise vehicle with lift and position Used Oil Collection and Extraction Unit - SMN372500- under Haldex clutch.

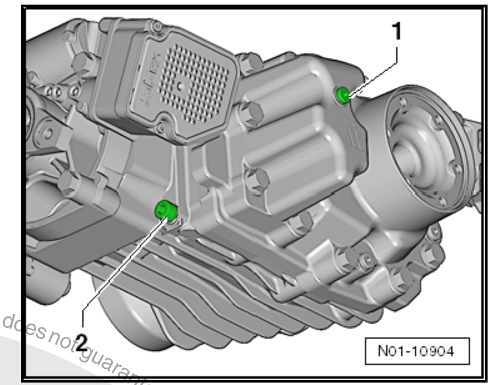


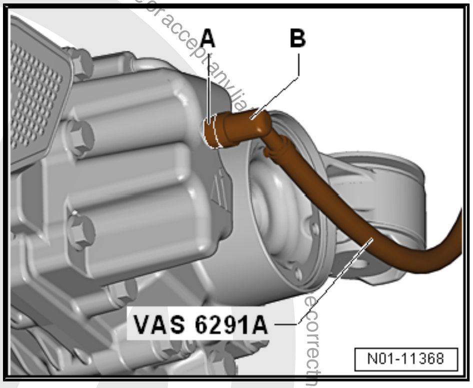
- Remove oil drain plug - 2- and drain high-performance oil completely.
- Install a new oil drain plug with a new sealing ring and tighten to the tightening specification. The oil drain plug has a permanent seal.

Tightening specification	Nm
Oil drain plug	30

Filling Oil

- Remove oil filler plug - 1-.





- Disconnect elbow - B- from adapter - A- and completely install adapter in oil filler opening.
- Position elbow again and route hose over driveshaft to prevent it from hanging down.
- Place the Shop Crane - Drip Tray - VAS6208- under the final drive.
- After hose is routed above left rear wheel and away from vehicle, you can lower vehicle.

Note

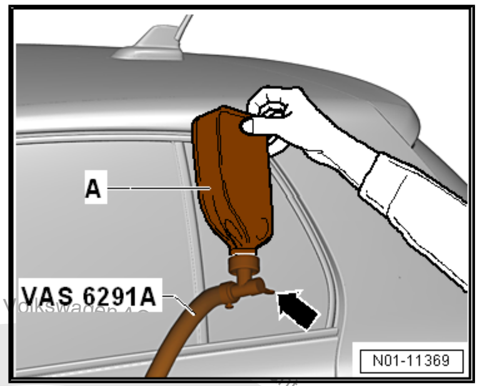
♦ *The oil temperature when checking the oil level is 20 °C to 40 ° C (68º and 104ºF).*

♦ *Pay attention to the temperature of the oil container when filling.*

♦ *The oil temperature can be measured using the Digital Thermometer - VAS6519- .*

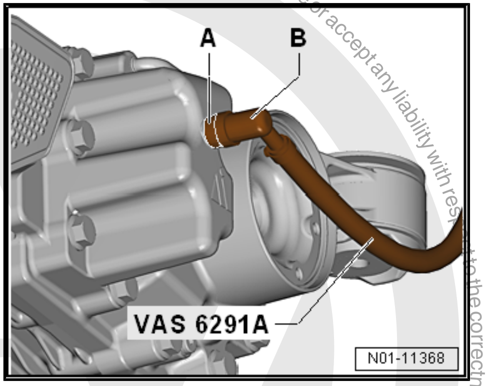
Oil Capacities, Oil Specifications, refer to ⇒ page 46 .

- Screw oil container - A- with valve closed - arrow- onto Charging Device For Haldex Coupling 2 - VAS6291 A- .
- Open valve - arrow- and hold oil container as shown in illustration.
- With the Charging Device For Haldex Coupling 2 - VAS6291 A- fill with oil until flows out between the adapter and the transmission housing.
- Remove the Charging Device For Haldex Coupling 2 - VAS6291 A- .
- Remove the adapter - A-.

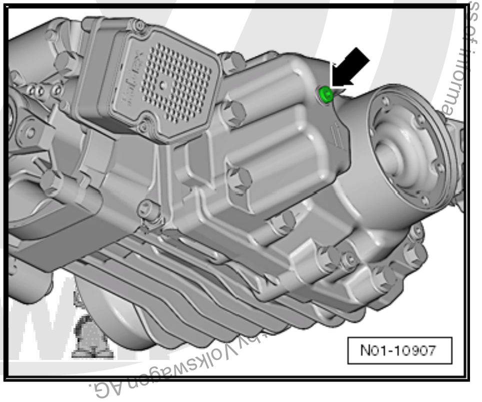


- If necessary let the excess flow out until it only drips.

The oil level is correct when the oil drips out of the oil fill hole.



- Install a new oil filter plug - arrow- with a permanent seal and tighten to the tightening specification.



Tightening specification	Nm
Oil filler plug	15

Check the specified temperature range while checking the oil level, if while filling an oil temperature between 20 °C to 40 °C (68º and 104ºF) cannot be guaranteed.

The oil temperature can be measured using the Digital Thermometer - VAS6519- .

If the oil temperature is not between 20...40 °C (68º and 104ºF), either drive the vehicle to warm it up or let the oil temperature cool down.

Oil capacities, oil specifications.	
Oil capacities 4Motion	Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03
Oil specification	Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03

4.18 Inner and Outer Body, Checking for Corrosion

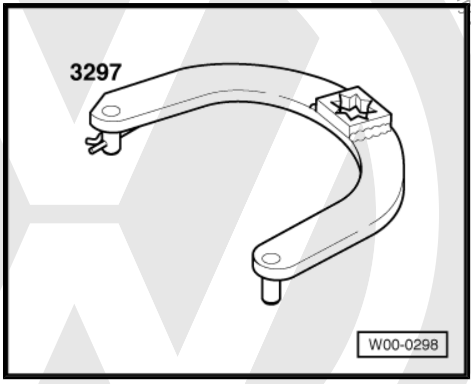
Check Locations

- Sunroof frame
- Inner and outer door frame
- The area around the trim strips
- Windshield roof edge
- Outer and inner A-pillar
- Hood
- Wheel housings
- Inner and outer rear lid

4.19 Ribbed Belt, Tension, Adjusting, Engines without Automatic Tensioner

Special tools and workshop equipment required

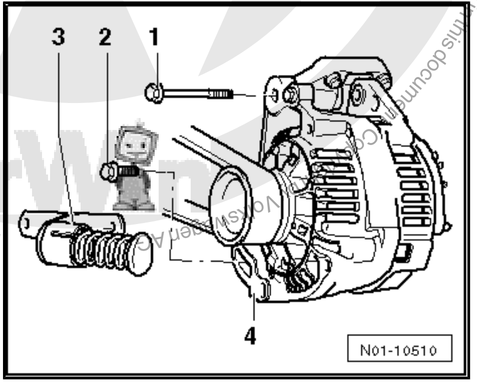
- Tensioning Lever - 3297-



– Loosen the bolts - 1 + 2-.

3 - Clamp

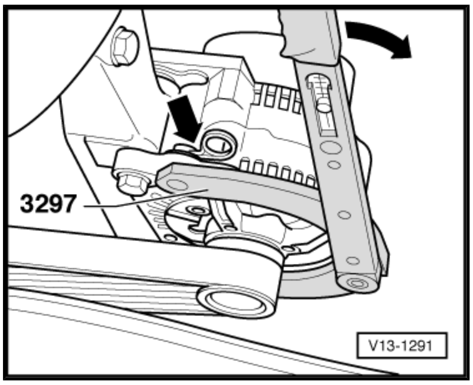
4 - Generator



– Insert clamping lever, secure with pin - arrow- and tip generator down (use e.g. torque wrench as drive for 3297).

– Press generator as far as clamp stop at least three times using clamping lever to ensure optimum ease of movement.

– Tighten first the lower, then the upper generator bolt to 25 Nm.

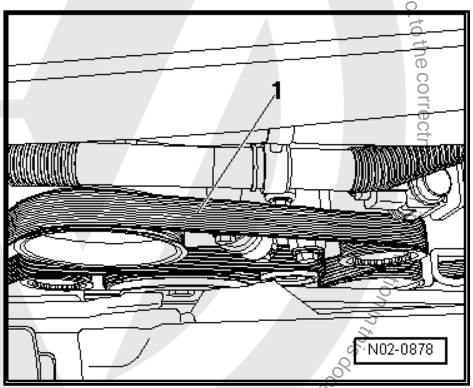


4.20 Ribbed Belt, Checking

Perform the following:

– Turn engine at vibration damper/ belt pulley with socket wrench.

Check the ribbed belt for - 1-:



- Sub-surface cracks (cracks, core ruptures, cross sectional breaks)
- Separation (cover layer, belt cords)
- Breaks at lower layer
- Fraying of cords
- Wear at flanks (material wear, frayed flanks, hardening or glazing of flanks, surface cracks)
- Oil or grease contamination

Note

Replace the belt if any damage is found. This will prevent any belt malfunctions. Replacing the belt is a repair procedure.

4.21 Compass, Calibrating

Note

- *It should not take more than 30 seconds to calibrate compass.*
- *Vehicle must be standing still during calibration procedure.*

– Switch on the ignition.

– Wait 10 seconds.

– Switch on rear window defroster.

– Wait 10 seconds.

– Switch off rear window heater.

– Turn off ignition.

4.22 Coolant System, Check Freeze Protection and Coolant Level

⇒ “4.22.1 General Information”, page 49

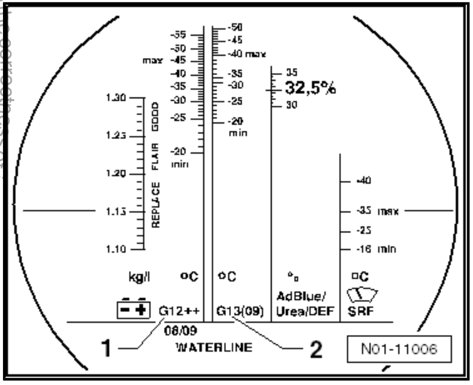
⇒ “4.22.2 Freeze Protection, Checking and Adding Coolant Additive”, page 49

⇒ “4.22.3 Coolant Level, Checking and Filling”, page 50

⇒ “4.22.4 Mixture Ratio”, page 51

4.22.1 General Information

Note

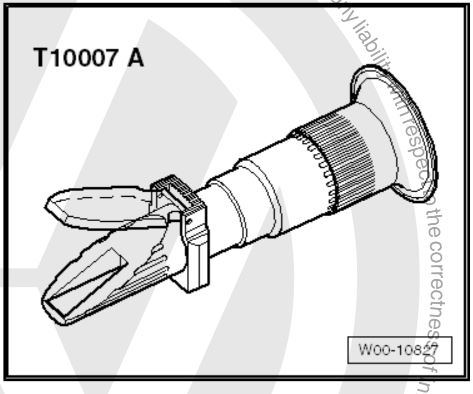


- *The water used for mixing greatly influences the effectiveness of the coolant. Do to the different water contents which can vary due to country or region, the water quality used is defined. Distilled water fulfills all the requirements. For this reason mix coolant with distilled water when supplementing and refilling the cooling system.*
- *Use only coolant additives from the Electronic Parts Catalog (ETKA). Using other coolant additives can impair the corrosion protectant. Loss of coolant can cause considerable damage to the engine.*
- *Coolant in the correct mixing ratio prevents freezing and corrosion damage as well as scaling. The boiling point is also increased. For these reasons the cooling system must have coolant additive the whole year.*
- *Especially in countries with tropical climates or when vehicle is driven under heavy load, the coolant improves the engine reliability by its increased boiling point.*
- *Refractometer - T10007A- MUST be used to determine the actual freeze protection.*
- *The freeze protection must be set to -25 °C (-13ºF), for countries with an artic climate, it must be set to -36 °C (-33ºF). The freeze protection can be increased only when a stronger freeze protection is required due to climatic conditions. The freeze protection can be set only down to -48 °C (-55 °F), otherwise the cooling effect of the coolant will be impaired.*
- *The coolant concentration must not be reduced by adding water, even during the warmer season. The freeze protection must be a minimum of -25 °C (-13ºF).*
- *Read off the freeze protection value on the scale for each refilled coolant additive.*
- *The temperature on the Refractometer - T10007 A- corresponds to the crystalization point. At this temperature, the first flakes of ice begin to form.*
- *Do not re-use used coolant.*
- *Use only water/coolant additive as lubricant for the coolant hoses.*

4.22.2 Freeze Protection, Checking and Adding Coolant Additive

Special tools and workshop equipment required

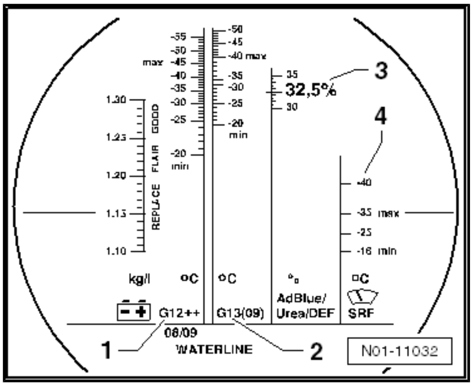
- ♦ Refractometer - T10007 A-


T10007 A
W00-10827

Note

Read the bright/ark boundary to obtain an accurate reading for the following tests. Place a drop of water on the glass to improve the readability of the bright/dark boundary. The bright/dark boundary can be clearly recognized on the “ WATERLINE”.

– Check the concentration of the coolant additive using Refractometer - T10007- (operating instructions).


-55
-50
max -45
-40
-35
-30
-25
-20
min
-50
-45
-40 max
-35
-30
-25
-20
min
35
32,5%
30
3
4
-40
-35 max
-25
-16 min
1.30
1.25
1.20
1.15
1.10
REPLACE
FLAIR
GOOD
kg/l
°C
°C
%
°C
G12++
G13(09)
AdBlue/
Urea/DEF
SRF
08/09
WATERLINE
1
2
N01-11032

The refractometer scale - 1- is designed for coolant additives G12; G12 Plus, G12 Plus Plus and G11.

The scale - 2- is designed only for coolant additive G13.

– Drain some of the coolant and add coolant additive if the freeze protection if the frost protection is inadequate.

Note

- ♦ *If you cannot clearly determine which coolant additive is in the coolant system, use the scale - 2- for coolant additive G13.*
- ♦ *Follow all disposal regulations.*

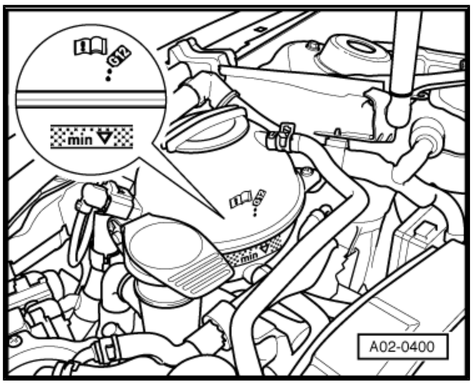
– Check the freeze protection after the road test.

4.22.3 Coolant Level, Checking and Filling

– Check the coolant level in the reservoir when the engine is cold.

- ♦ Delivery inspection: Coolant level at max. mark.
- ♦ Inspection service: Coolant level above the “ MIN mark” - arrow-.

– If coolant level is too low, fill with coolant mixture.


min
min
A02-0400

Note

Determine cause of fluid loss which cannot be attributed to normal use and rectify (repair measure).

4.22.4 Mixture Ratio

⚠ Caution

Use only distilled water for mixing coolant additives. Optimum corrosion protection can be reached only by using distilled water.

Freeze protection to	Coolant additive ratio	Distilled water
-13ºF (-25 °C)	approximately 40 %	approximately 60 %
-33ºF (-36 °C)	approximately 50 %	approximately 50 %

4.23 Air Filter, Cleaning Housing and Removing and Installing Air Filter

⇒ “4.23.1 Air Filter, Removing and Installing, 2.0L FSI”, page 51

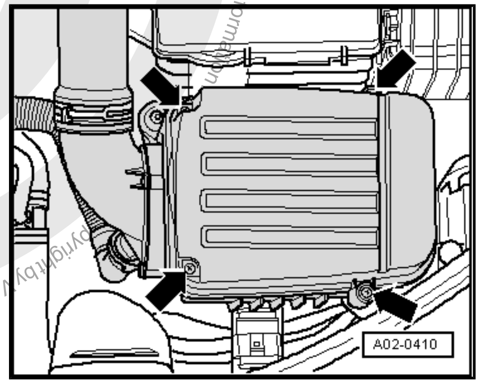
⇒ “4.23.2 Air Filter, Removing and Installing, 2.0L TFSI Engines”, page 52

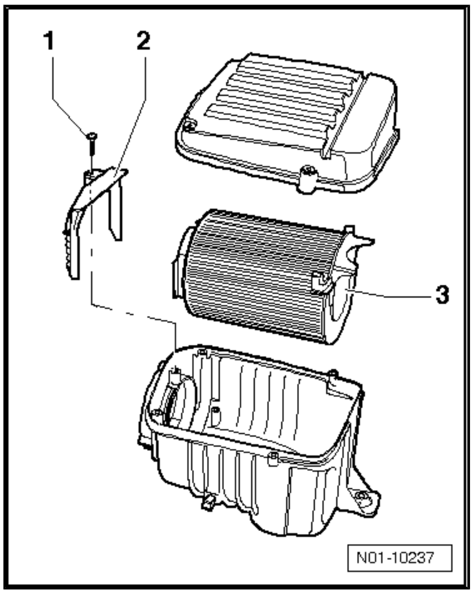
⇒ “4.23.3 Air Filter, Removing and Installing, 2.5L Gasoline Fuel Injection Engines”, page 54

⇒ “4.23.4 Air Filter, Removing and Installing, 3.2L Engines”, page 56

4.23.1 Air Filter, Removing and Installing, 2.0L FSI

– Remove the 4 bolts - arrows- and remove the cover.





- Remove the bracket - 2-.
- Remove the old filter - 3-.

Note

Follow all disposal regulations.

- Clean the filter housing and install the new air filter.

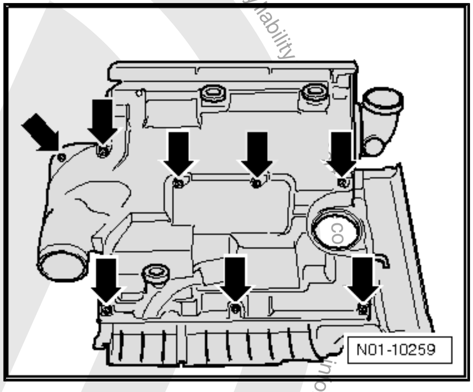
Tightening Specifications:

- 2.0L FSI: Tighten the bolt - 1- on the bracket to 2 Nm and the bolts on the cover to 3 Nm.

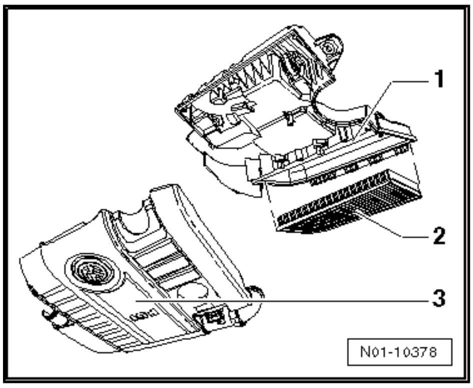
4.23.2 Air Filter, Removing and Installing, 2.0L TFSI Engines

Removing

- Remove the engine cover. Refer to ⇒ “4.24 Upper Engine Cover, Removing and Installing”, page 58 .
- Place engine cover with upper side on a soft surface, prevent damage to chrome applications.
- Remove the bolts - arrows- on the underside of the engine cover.



- Separate lower part of air filter housing - 1- from upper part - 3-.



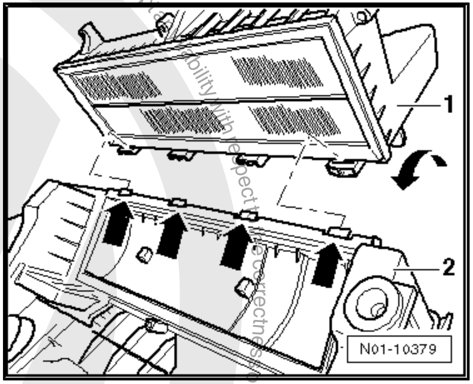
- Remove the air filter - 2- from the air filter housing lower section - 1-.

Installing

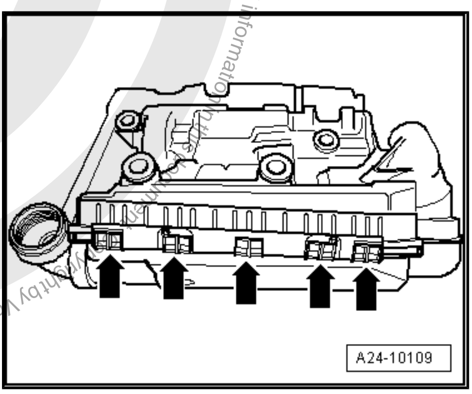
Note

- *Self-locking bolts are equipped for fastening the upper part of the air filter housing to the lower part of air filter housing as well as the intake supports. If these bolts are loosened of tightened with a drill motor, the threads in the upper part of air filter housing can be damaged.*
- *For this reason, a drill motor may only be used when the following prerequisites are met:*
- *Drill motor speed must not exceed 200 RPM.*
- *The torque must be adjustable to max. 3 Nm.*
- *Replace the engine cover rubber buffer on the Golf GTI “ Edition 30” and the Golf GTI “ Pirelli” ⇒ “4.24.3 Engine Cover Rubber Buffers, Removing and Installing”, page 60 .*

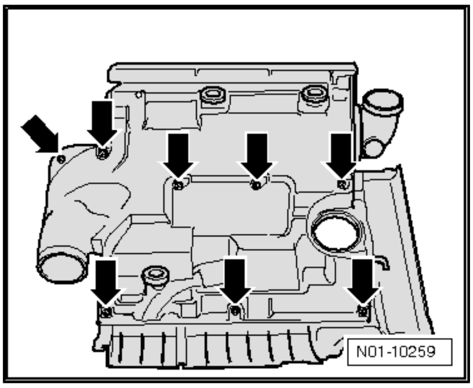
- Engage upper part of air filter housing - 1- on retaining tabs - arrows- on upper part of air filter housing - 2- and pivot in direction of arrow, then lightly press on.



- Both housing halves must fit together flush, - arrows-.



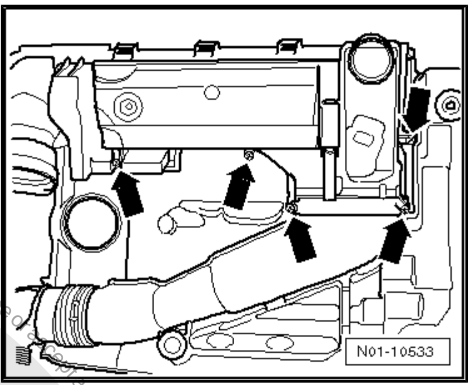
- Tighten bolts - arrows- to maximum 3 Nm.



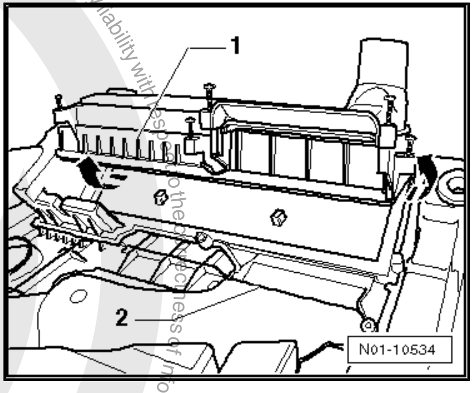
4.23.3 Air Filter, Removing and Installing, 2.5L Gasoline Fuel Injection Engines

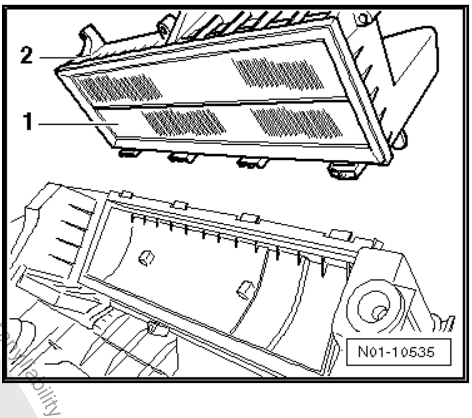
Removing

- Remove engine cover. Refer to ⇒ “4.24 Upper Engine Cover, Removing and Installing”, page 58 .
- Place the top of the engine cover onto a soft surface, to prevent damage to housing.



- Remove the bolts - arrows- on the underside of the engine cover.





- Flip up and remove lower part of air filter housing - 1- in direction of - arrow-.
- Remove the air filter - 1- from the air filter housing lower section - 2-.
- Blow out air filter housing with compressed air if necessary

Installing

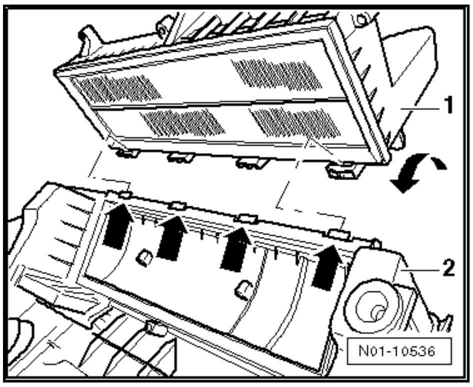
- Insert the air filter - 1- into the air filter housing lower section - 2-.

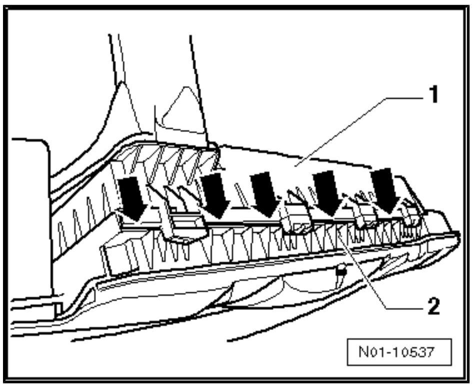
Note

Make sure sealing surfaces on air filter housing are correctly positioned.

Note

- ♦ *Self-locking bolts are equipped for fastening the upper part of the air filter housing to the lower part of air filter housing as well as the intake supports. If these bolts are loosened of tightened using a drill motor, the threads in the upper part of air filter housing can be damaged.*
- ♦ *For this reason, a drill motor may only be used when the following prerequisites are met:*
- ♦ *The drill motor RPM is max. 200 / min.*
- ♦ *The torque must be adjustable to max. 2 Nm.*



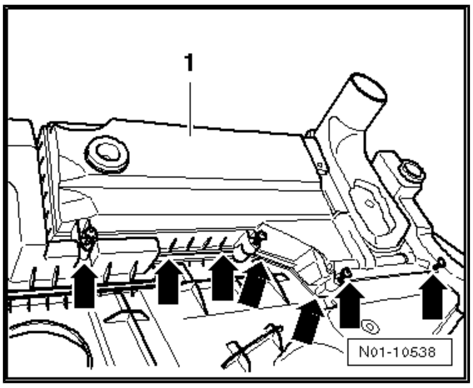


- Hook lower part of air filter housing - 1- onto retaining tabs - arrows- of upper part of air filter housing - 2-, pivot in direction of - arrow-, and then lightly press on.

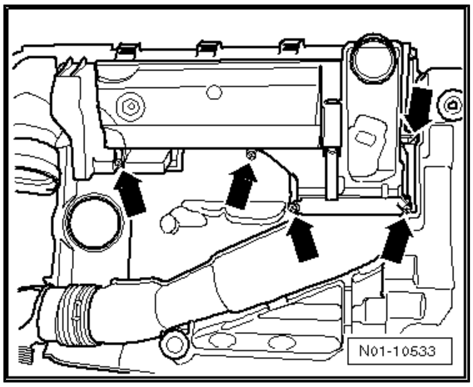
Check the fit of housing halves - 1- and - 2- (rear part):

- Both housing halves must fit together flush, - arrows-.

Check the fit of housing halves - 1- and - 2- (front part):



- Both housing halves must fit together flush, - arrows-.
- Tighten bolts - arrows- to maximum 2 Nm.



Note

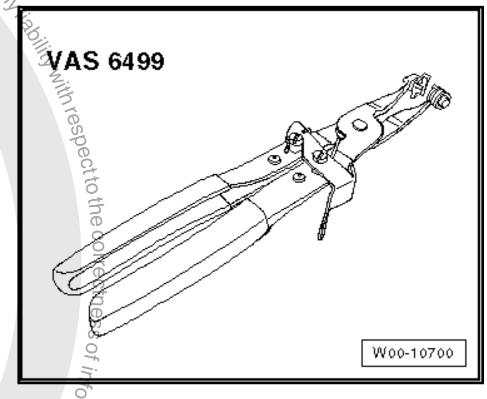
Tighten the bolts alternately and uniformly to prevent both housing halves from distorting.

- Install engine cover. Refer to ⇒ “4.24 Upper Engine Cover, Removing and Installing”, page 58 .

4.23.4 Air Filter, Removing and Installing, 3.2L Engines

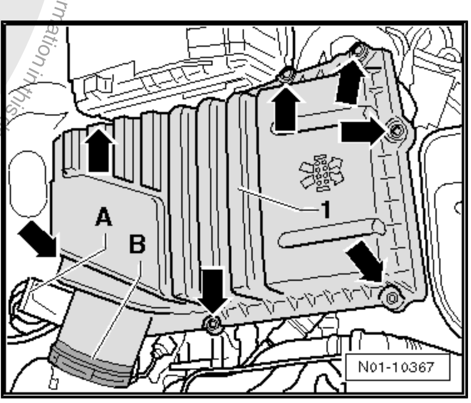
Special tools and workshop equipment required

- Spring Clip Pliers - VAS6499-

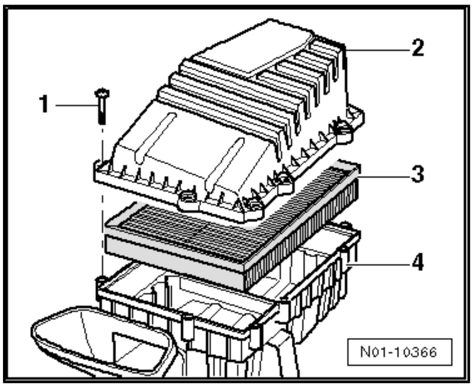


Removing

- Open hose clamp - B- with Spring Clip Pliers - VAS6499- and remove air guide hose.
- Release connector - A- from mass airflow sensor and remove.
- Remove fastening bolts - arrows-.
- Lift and remove the air filter housing upper section.



- Remove the old filter - 3-.

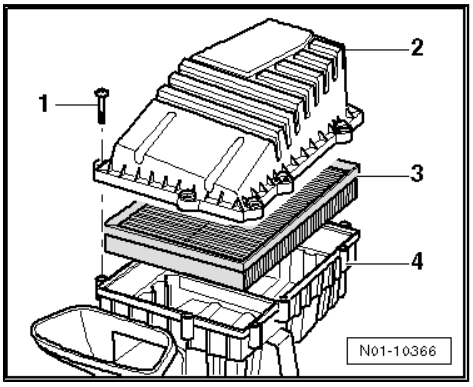


Note

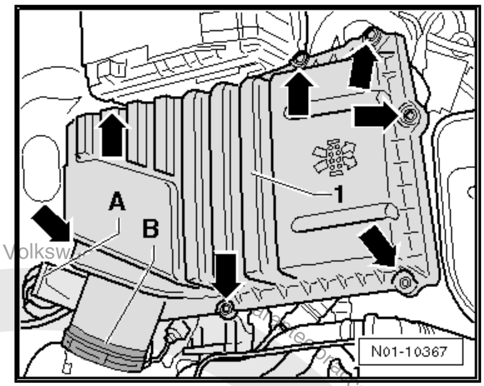
Follow all disposal regulations.

Installing

- Clean filter housing - 4- and insert new filter insert - 3-.
- Install the air filter housing upper section - 2- and tighten the bolts - 1- to 5 Nm.



- Connect mass airflow sensor connector - A- and secure.
- Place air guide hose on mass airflow sensor and secure with hose clamp - B-.



4.24 Upper Engine Cover, Removing and Installing

⇒ “4.24.1 General Information”, page 58

⇒ “4.24.2 Engine Cover, Removing and Installing 2.0L TFSI Gasoline Direct Fuel Injection Engines”, page 58

⇒ “4.24.4 Engine Cover, Removing and Installing 2.0L FSI Gasoline Direct Fuel Injection Engine”, page 60

⇒ “4.24.5 Engine Cover, Removing and Installing 2.0L TSI”, page 61

⇒ “4.24.6 Engine Cover, Removing and Installing, 2.5L Gasoline Fuel Injection Engines”, page 61

⇒ “4.24.3 Engine Cover Rubber Buffers, Removing and Installing”, page 60

4.24.1 General Information

Caution

- *Be sure to not strike the engine cover with a fist or a tool when installing it and engaging the fastening points. There is a risk of damage.*

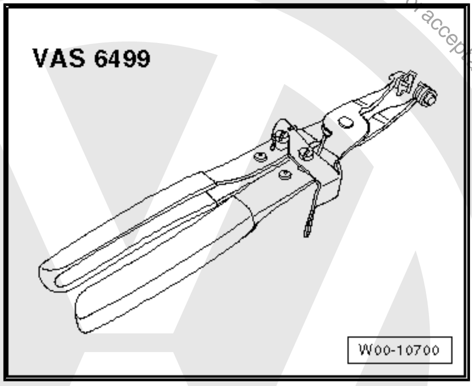
4.24.2 Engine Cover, Removing and Installing 2.0L TFSI Gasoline Direct Fuel Injection Engines

Vehicles up to model year 2005, refer to ⇒ page 59 .

Vehicles from MY 2006, refer to ⇒ page 59 .

Special tools and workshop equipment required

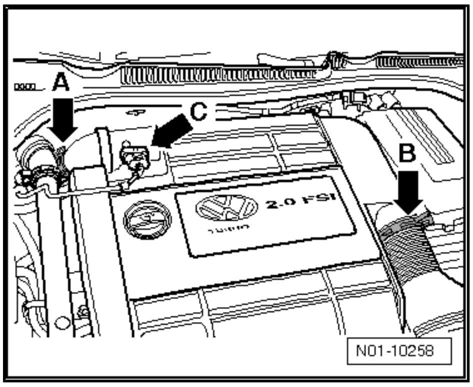
- Spring Clip Pliers - VAS6499-



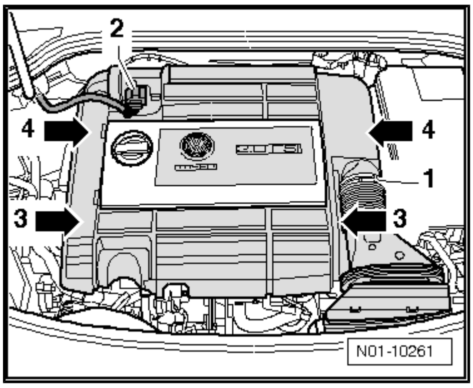
Vehicles up to MY 2005

Removing

- Relieve load on clamps at Mass Air Flow (MAF) sensor - A- and at air intake connection - B- using Spring Clip Pliers - VAS6499- and slide them back.



- Disconnect connector - C- from Mass Air Flow (MAF) sensor, and set connector aside.
- Slide back rubber boot - 1- in direction of turbocharger.
- Remove engine cover first at front - arrow 3- and then at rear - arrow 4-. To do this, grab under the cover at the sides.



Installing

Note

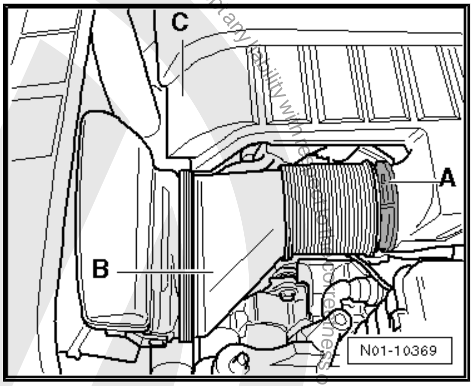
Do not grease the rubber buffer on the engine cover before installing.

Install in reverse order of removal.

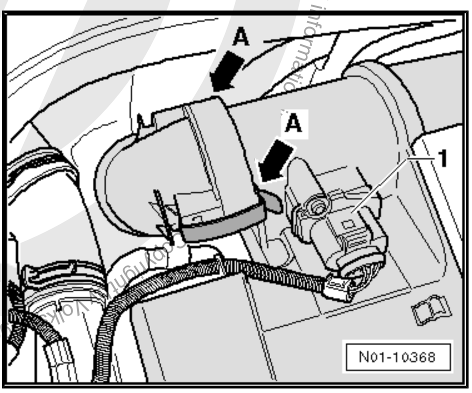
Vehicles from MY 2006

Removing

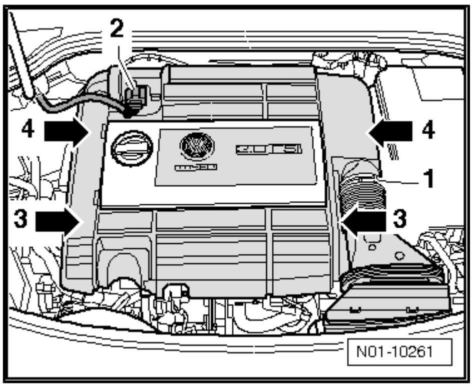
- Release spring clip - A- using Spring Clip Pliers - VAS6499- and slide air intake - B- from engine compartment cover - C-.



- Disconnect connector - 1- from Mass Air Flow (MAF) sensor, and set connector aside.
- Release both fastening clips - A arrows-.



– First disengage engine cover at fastening points - arrows 3- and then at fastening points - arrows 4- and lift up.



Installing

Note

Do not grease the rubber buffer on the engine cover before installing.

Install in reverse order of removal.

4.24.3 Engine Cover Rubber Buffers, Removing and Installing

Only Golf GTI “ Edition 30” and Golf GTI “ Pirelli”

Note

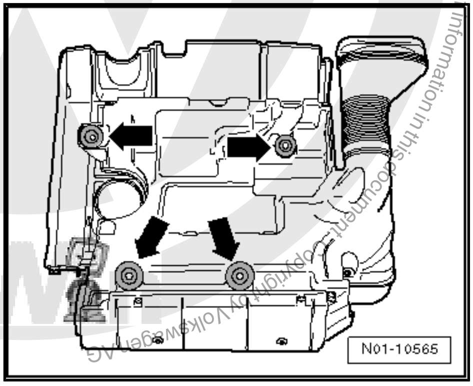
The engine cover rubber buffer is replaced every 60,000 km on the Golf GTI “ Edition 30” and Golf GTI “ Pirelli” when the air filter is changed.

– Remove engine cover as described ⇒ “4.24.2 Engine Cover, Removing and Installing 2.0L TFSI Gasoline Direct Fuel Injection Engines”, page 58

– Lay engine cover with top side on a soft surface to prevent damage to chrome.

– Remove engine cover rubber buffers - arrows- upward.

– Press the new rubber buffers back into their guides.



Note

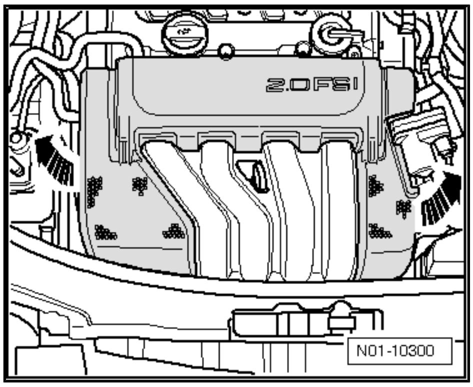
Do not grease the rubber buffer on the engine cover - arrows- before installing.

To install engine cover, reverse sequence used when removing it.

4.24.4 Engine Cover, Removing and Installing 2.0L FSI Gasoline Direct Fuel Injection Engine

Removing

– Unclip the engine cover - arrows- and remove it.



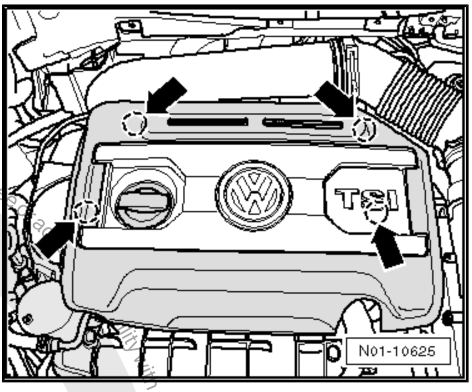
Installing

Install in reverse order of removal.

4.24.5 Engine Cover, Removing and Installing 2.0L TSI

Removing

– Unclip the engine cover - arrows- and remove it.



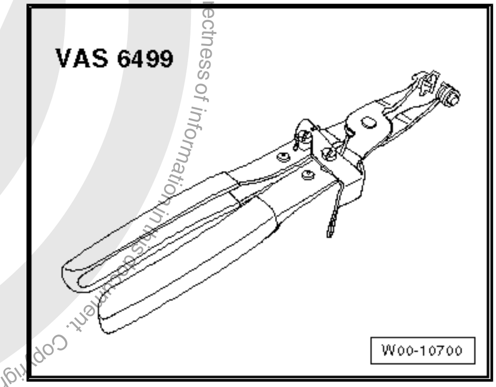
Installing

Install in reverse order of removal.

4.24.6 Engine Cover, Removing and Installing, 2.5L Gasoline Fuel Injection Engines

Special tools and workshop equipment required

- Spring Clip Pliers - VAS6499-

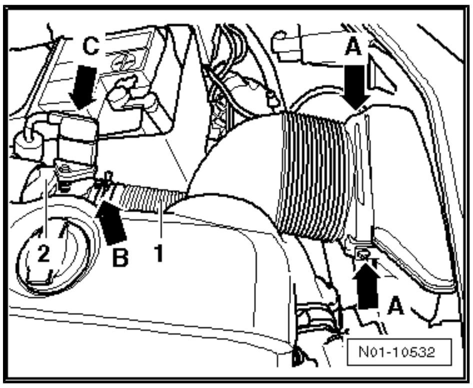


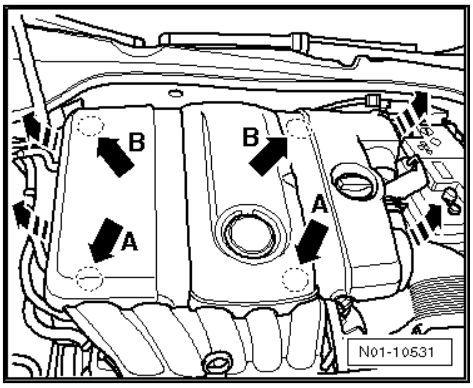
Removing

– Remove bolts from air intake - arrows A-.

– Release the clamp from the mass airflow sensor - arrow B- with the Spring Clip Pliers - VAS6499- and push it back.

– Disconnect the air intake hose - 1- from the mass airflow sensor - 2-.

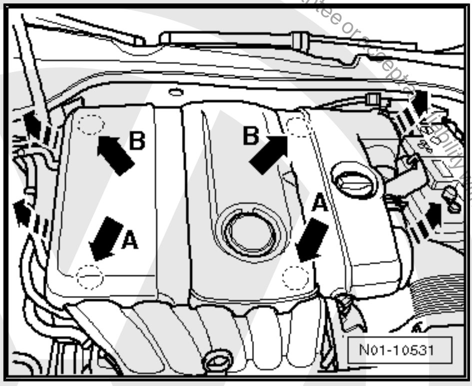




- Disconnect connector - arrow C- from mass airflow sensor and lay connector aside.
- First, pull the engine cover at the fastening points - arrows A- carefully out from the retainer.
- Lift the front of the engine cover slightly.
- Then, pull engine cover carefully at mounting points - arrows B- out of retainer.
- Carefully lift the engine cover upward and out - direction of arrows-.

Note

Make sure that the mass airflow sensor is not damaged when removing the engine cover.



Installing

- First place engine cover on to rear mounting points - arrows B-, then on to front mounting points - arrows A-.

Carefully press by hand on to mounting points until engine cover engages audibly.

Note

- ♦ *Make sure that the mass airflow sensor is not damaged when installing the engine cover.*
- ♦ *Install in reverse order of removal.*

4.25 Lower Engine Compartment Cover, Removing and Installing

Procedure

Removing the lower engine cover (noise insulation) can be found in the Repair Manual under:

Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Removal and Installation .

4.26 Engine and Engine Compartment Components, Checking for Leaks and Damage.

Perform visual check as follows:

- Check engine and components in engine compartment for leaks and damage.
- Check the lines, hoses and connections on the following systems:

- ♦ Fuel System
- ♦ Heating and ventilation system
- ♦ Lubrication system
- ♦ A/C system
- ♦ Air intake system
- ♦ Brake system

for leaks, abrasions, porosity and brittleness.

Note

- *Make sure the all malfunctions detected are rectified within repair measures.*
- *Determine cause of fluid loss which cannot be attributed to normal use and rectify (repair measure).*

4.27 Engine Oil Level, Checking

Note

- *After turning off the engine, wait at least 3 minutes for the oil to flow back into the oil pan.*
- *Pull out the oil dipstick and wipe it with clean cloth. Insert the dipstick and push it all the way down.*

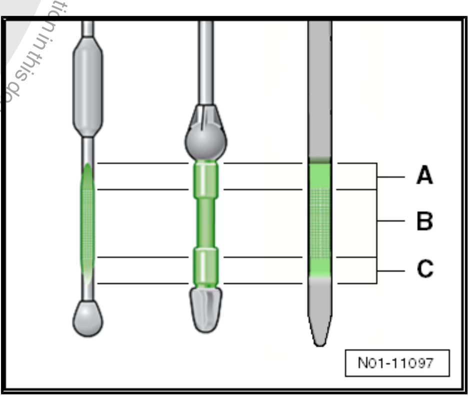
Note

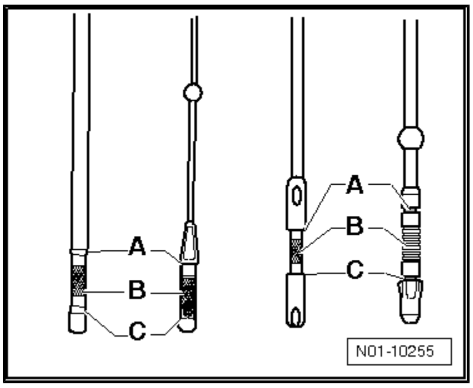
Follow all disposal regulations.

– Pull out dipstick again and read oil level.

Note

The oil level must always be in the A range at the delivery inspection.





A - Do not add oil.

B - Engine oil can be filled up to the - A- range.

C - Add oil. The oil level must be at least in the upper third of the measuring range - B-.

– Drain or extract some of the oil if the oil level goes above the - A- mark to prevent damage to the catalytic converter.

– Fill the oil until it reaches the - A- marking if the oil level goes below the - C- marking. Engine oil specification. Refer to ⇒ “2.2 Service Tables”, page 6 .

4.28 Engine Oil, Draining or Extracting and Filling, Replacing Oil Filter

⇒ “4.28.1 Engine Oil, Draining or Extracting”, page 64

⇒ “4.28.4 Filling Engine Oil”, page 67

⇒ “4.28.3 Oil Filter, Removing and Installing 3.2L Fuel Injection Engines”, page 67

⇒ “4.28.4 Filling Engine Oil”, page 67

4.28.1 Engine Oil, Draining or Extracting

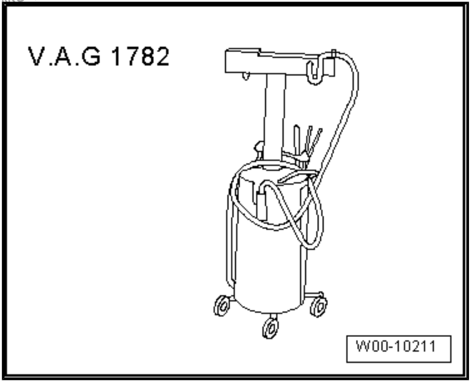
Caution

- *Extracting engine oil is not permitted with the V6 engine.*
- *The oil drain plug is equipped with a permanent seal, therefore the oil drain plug must always be replaced.*

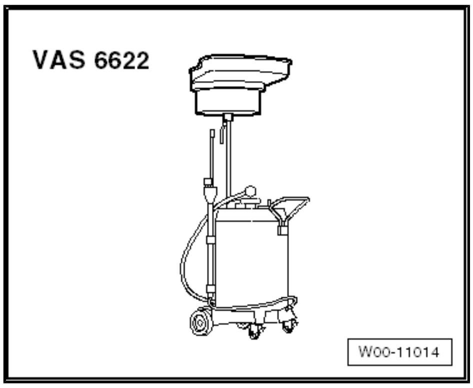
3) Extracting engine oil is not permitted with the V6 engine.

Special tools and workshop equipment required

- Used Oil Collection and Extraction Unit - SMN372500-



- Used Oil Collection and Extraction Unit - SMN372500-



- Leak Detection Kit - Hand Pump with Cartridge - VAS6204/1-

Engine Oil, Draining or Extracting

Perform the following:

– Extract the engine oil using Used Oil Collection and Extraction Unit - SMN372500- .

or

– Extract the engine oil using Used Oil Collection and Extraction Unit - SMN372500- .

or

– Remove oil drain plug

– Let engine oil drain.

– Install the new oil drain plug and seal hand-tight and then tighten to the tightening specification.

– Fill motor oil. Specification, refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03 .

– Fill motor oil. Specification, refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03 .

Oil Drain Plug Tightening Specifications:

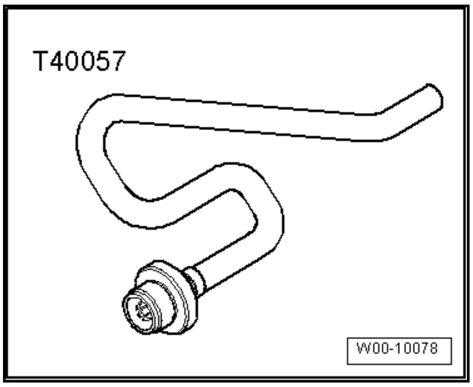
- M14: 30 Nm
- M24 50 Nm

> ⚠ WARNING
>
> - *Torque settings must not be exceeded*
> - *A torque figure that is too high may lead to leaks or even damage the oil pan.*

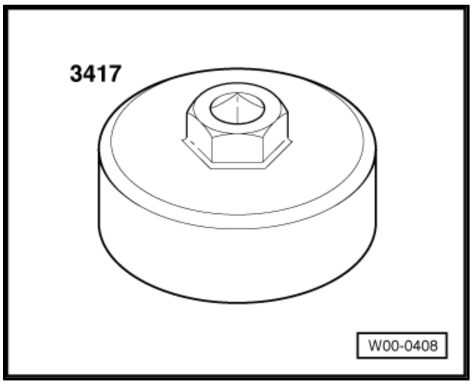
4.28.2 Oil Filter, Removing and Installing 2.5L Gasoline, 2.0L FSI and 2.0L TFSI

Special tools and workshop equipment required

- Oil Drain Adapter - T40057-



- Wrench - Oil Filter - VAS3417-

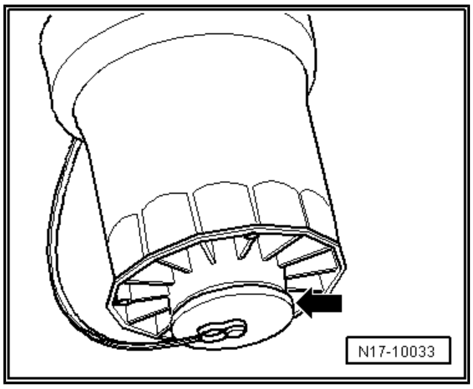


- Torque Wrench 5-50Nm - VAG1331-

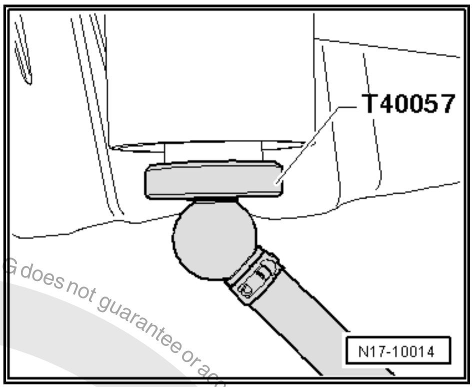
Perform the Following Procedure:

– Remove the dust cap - arrow- from the oil filter housing.

Empty the oil filter housing before removing it.



– Screw Oil Drain Adapter - T40057- into oil filter housing and hold hose into an oil collecting pan.



Note

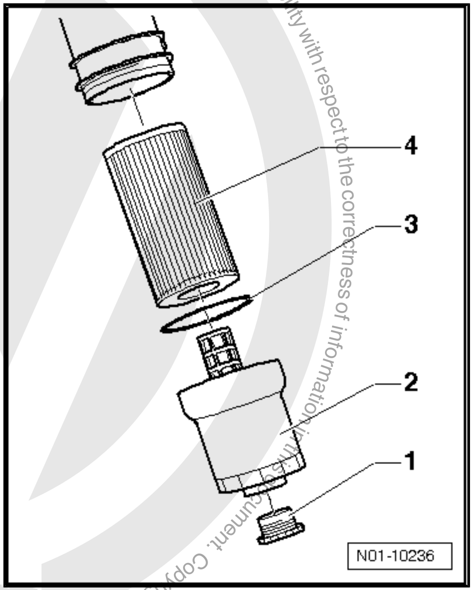
By screwing in the Oil Drain Adapter - T40057- a valve is opened in the oil filter housing. When the Oil Drain Adapter - T40057- is unscrewed, the valve automatically closes again.

– Allow engine oil to drain.

– Unscrew Oil Drain Adapter - T40057- again.

– Oil filter housing can now be unscrewed using Wrench - Oil Filter - VAS3417- .

– Replace the oil filter - 4- and seal - 3-.



Note

Follow all disposal regulations.

– Tighten the oil filter housing - 2- to 25 Nm.

– Turn the dust cap - 1- hand-tight into the oil filter housing - 2-.

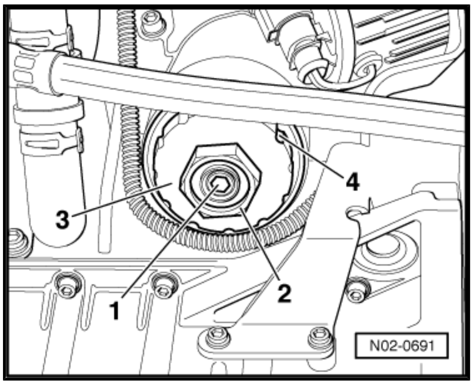
4.28.3 Oil Filter, Removing and Installing 3.2L Fuel Injection Engines

Removing

Note

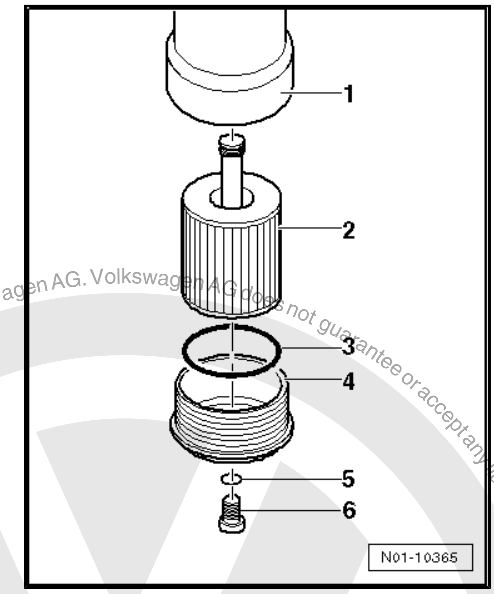
- *Follow all disposal regulations.*
- *Coat the new O-rings with oil before installing them.*
- *Be careful not to let oil drip onto other parts in the engine.*

- Remove oil drain plug - 1- and drain oil.
- Loosen lower portion of filter housing - 3- at the hex - 2- or circumference - 4- and remove.
- Remove the old air filter.
- Wipe the air filter housing with a cloth.



Installing

- Install the new engine oil filter - 2- and O-ring - 3-.
- Tighten lower part of filter - 4- at hex head to 25 Nm.
- Install drain plug - 6- with new seal - 5- and tighten to 10 Nm.



4.28.4 Filling Engine Oil

Oil specifications, refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03 .

- Fill motor oil. Specification, refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03 .

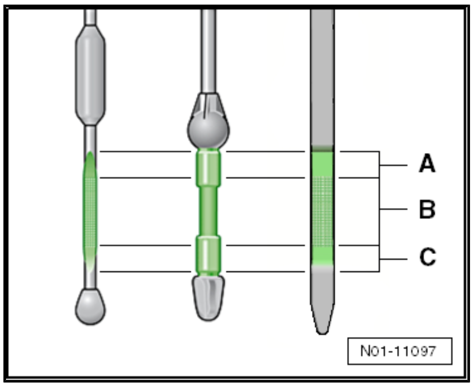
Engine oil capacities, refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03 .

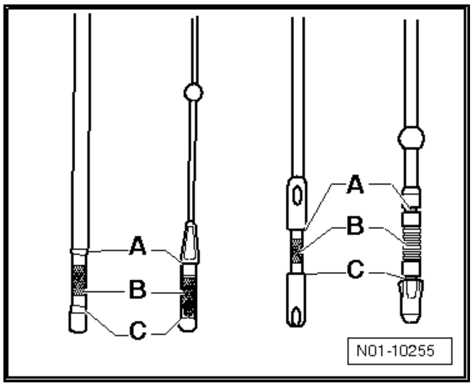
General Information

Note

Follow all disposal regulations.

- After the oil is filled, wait 3 minutes and then check the oil level.
- Pull out the oil dipstick and wipe it with clean cloth. Insert the dipstick and push it all the way down.
- Pull out the dipstick again and check the oil level.





If the dipstick appears as illustrated:

A - Do not add oil.

B - Engine oil can be filled up to the - A- range.

C - Add oil. The oil level must be at least in the upper third of the measuring range - B-.

- Drain or extract some of the oil if the oil level goes above the - A- mark to prevent damage to the catalytic converter.
- Fill the oil until it reaches the - A- marking if the oil level goes below the - C- marking. Engine oil specification. Refer to ⇒ “2.2 Service Tables”, page 6 .

4.29 Road Test

The following checks depend on the vehicle equipment level and the available testing possibilities (city or rural).

During the road test, check the following:

- Engine: Performance, stalling, idle, acceleration
- Clutch: Driving off, pedal force, smell
- Shift lever: Easy movement, shift lever position
- Automatic Transmission: Selector lever position, shift lock / ignition key interlock, shift behavior, display in instrument cluster
- Foot and parking brake: Function, free travel and effectiveness, pulling to one side, shuddering, squeal
- ABS functionality: When braking with activated ABS, the brake pedal must pulse noticeably.
- Steering: Functionality, steering free-play, steering wheel center position when driving straight ahead.
- Power roof: Function
- Radio and Radio Navigation System, Functionality, reception, speed compensated volume (SCV), objectionable noise
- Multifunction indicator (MFI): Functions
- Air Conditioning: Check functionality (at low temperatures, test the function in the workshop)
- Vehicle: Pulling to one side while driving straight ahead (level road)

– Imbalance: Wheels, driveshafts and propshafts
– Wheel bearings: Noise
– Engine: Hot start function

4.30 Wheel Bolts, Tightening Specifications

Removing and Installing Wheel Bolt Covers

Note

Depending on vehicle equipment, wheel bolts may be covered by the following components:

♦ Wheel bolt cover caps
♦ Center wheel cover
♦ Full wheel cover

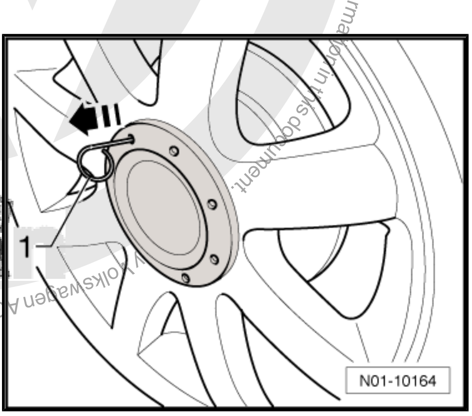
– Remove the corresponding wheel bolt cover, if present.

Note

The pulling hook for removing the cover caps or center wheel cover is located in the vehicle tool kit.

Removing Center Wheel Cover

– Insert removal hook into one of the holes of the center hubcap and pull in - direction of arrow-.

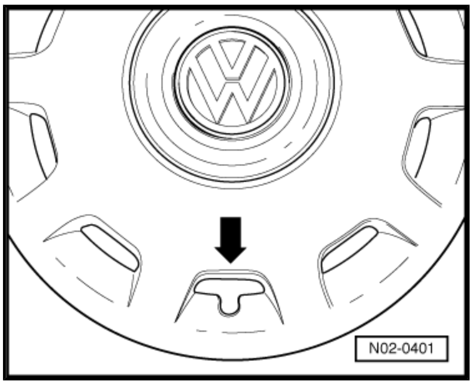


Installation Information

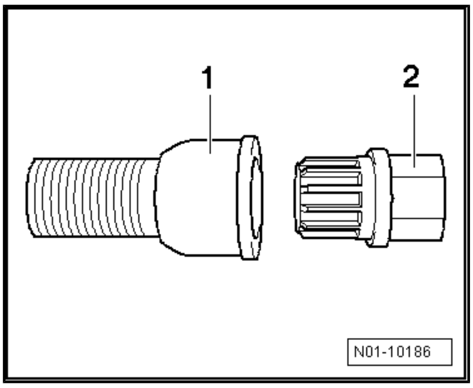
Note

♦ *Cover caps protect the wheel bolts and should be reinstalled after final tightening of the wheel bolts.*
♦ *Note that the center wheel cover tab must engage into rim recess for some rims.*
♦ *Place the adapter and extractor back in the vehicle tool kit.*

– On vehicles with full wheel cover, install cover so that tire inflating valve is guided through the designated recess - arrow-.



Loosening and Tightening Anti-Theft Wheel Bolts

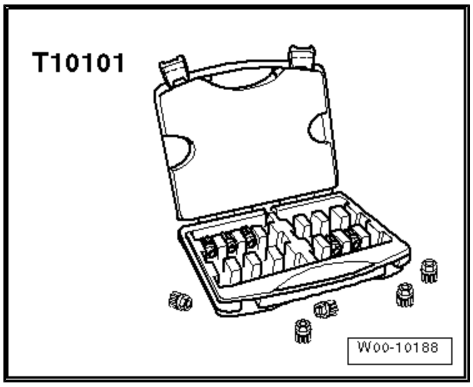


Note

- *The adapter to loosen/tighten the anti-theft wheel bolts is located with the vehicle tool kit.*
- *If there is no adapter in the vehicle for loosening/tightening the anti-theft wheel bolts, use Wheel Bolt Master Socket Set - T10101- .*
- *If the adapter is lost, a new replacement adapter can be obtained only according to the code number.*
- *Code number of adapter for loosening and tightening anti-theft wheel bolts is stamped on the facing side of the adapter.*

Special tools and workshop equipment required

- Wheel Bolt Master Socket Set - T10101-

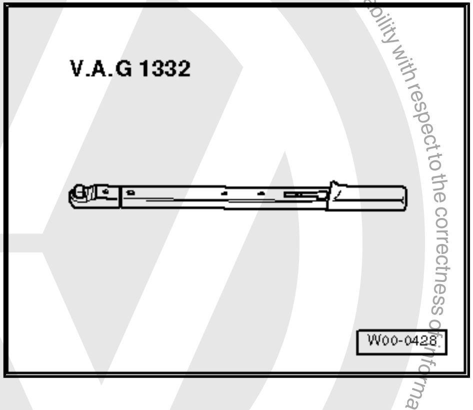


- Slide adapter into anti-theft wheel bolt until it stops.
- Slide wheel wrench on to adapter until it stops.
- Perform final tightening of wheel mounting bolts to the correct tightening torque.

Final Tightening of Wheel Mounting Bolts

Special tools and workshop equipment required

- Torque Wrench 5-50Nm - VAG1332-



Note

Make sure the wheel bolts are retightened alternately.

Tightening Specification: 120 Nm

4.31 Radio Code, Checking with Vehicle Diagnostic Tester

Requirement for the Vehicle Diagnostic Tester

- The Vehicle Diagnostic Tester is connected to the central data bank (Carport, Fazit) via the Central Partner Network (CPN).
- The existing access authorization for the “ GeKo” system

Note

- *The radio codes can be requested in the central database and shown on the Vehicle Diagnostic Tester display.*
- *To activate the radio, the codes must be entered via the radio keys, as before. Refer to ⇒ “4.32 Radio and Radio Navigation System, Entering PIN for Anti-Theft Code and Assign Local Radio Stations”, page 71 .*

Procedure

- Connect the Vehicle Diagnostic Tester Refer to ⇒ “3.4 Vehicle Diagnostic Tester , Connecting”, page 14 .
- Switch on the ignition.
- Touch button/field on screen: “ GUIDED FUNCTIONS”.
- Press `>` button to confirm.
- Select in succession:
- Brand
- Type
- Model year
- Engine code
- Confirm vehicle identification.
- Select in succession:
- “ Radio system”.
- “ Request radio code”.
- Perform code request according to instructions from “ GUIDED FUNCTIONS”.
- End code request as follows:
- Press the `Go To` button - arrow- on the display.
- Press the `End` button on the display.
- Press the `Exit` button in the exit menu.
- Turn off the ignition and disconnect the diagnostic connector.

4.32 Radio and Radio Navigation System, Entering PIN for Anti-Theft Code and Assign Local Radio Stations

The anti-theft coding electronically prohibits unauthorized individuals from starting the unit again after it has been removed. This anti-theft code is also called the radio code of security code. Security code means that every unit with anti-theft coding has been programmed with its own code. This security code is not active from the factory. If a device card is available, the security code is on it. If the device card is not available, the security code can be requested from the central database using the Vehicle Diagnostic Tester .

Note

If an incorrect code is entered while canceling the electronic lock, the entire process can be repeated just one time more. If an incorrect code is entered once again, the unit will lock up for about one hour. It will not work. After an hour, during which the unit must remain switched on, the display will go out. The electronic lock can be cancelled as previously described. The cycle: two attempts, an hour locked, begins again.

Procedure

Refer to ⇒ Communication; Rep. Gr. 91 ; Description and Operation

4.33 Tire Pressure Monitoring System: Perform Basic Setting

Tire Pressure Monitoring System for North America, refer to ⇒ page 73 .

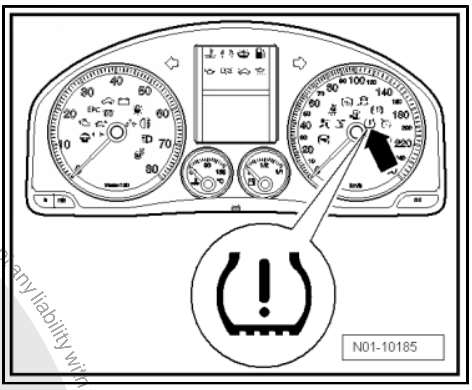
Note

- *Only carry out the Tire Pressure Monitoring Display Indicator Lamp - K220- basic setting after the tire pressures have been set to the correct values.*
- *If no pressure loss and no tire damage is detected after a tire pressure warning, the erroneous warning can be eliminated by a basic setting.*

Tire Pressure Monitory System display is a component of ABS Control Module - J104- software.

ABS Control Module compares speed and rolling circumference of individual wheels with help of ABS sensors. If rolling circumference of a wheel changes, this is displayed via tire pressure control indicator. The rolling circumference of a tire can change when:

- Tire inflation pressure is too low.
- Tires have structural damage.
- Vehicle is loaded on one side.
- Wheels of one axle are loaded higher (e.g. when towing trailer or driving uphill and downhill).
- Snow chains are installed.
- Spare wheel is installed.
- One wheel per axle was replaced.

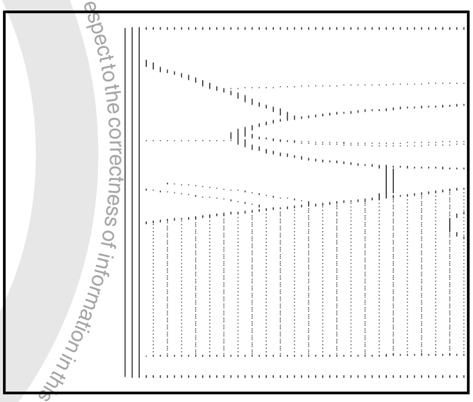


Tire Pressure Monitoring Display Indicator Lamp - K220- has a yellow indicator light in instrument cluster - arrow-.

- “ BLINKING LIGHT” means that no “ INITIAL BASIC SETTING” was performed yet.
- “ STEADY LIGHT”, in conjunction with a warning tone, indicates “ WARNING”, a loss of pressure has been recognized, check tire pressure, perform system basic setting.

Performing “ INITIAL” Basic Setting:

– Turn on the ignition.

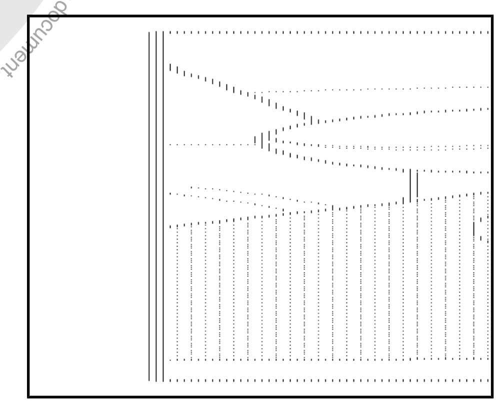


– At the same time press the ESP - 1- button and the SET - 2- button in the center console for longer than 2 seconds.

Press the ASR button if the vehicle does not have ESP.

Beginning of basic setting is confirm by a notifying tone.

Warning will no longer appear next time engine is switched on.



Perform the Basic Setting

– Turn on the ignition.

– Press the SET button - 2- until a confirmation tone sounds after changing the tire pressures or after changing one or more tires.

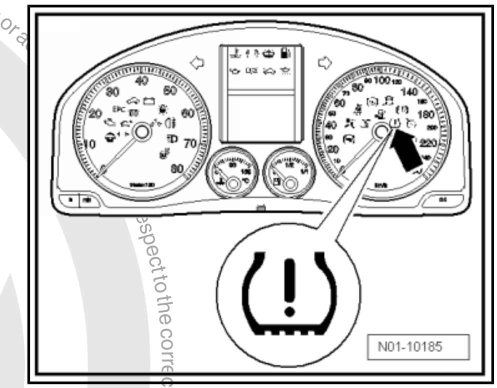
Warning will no longer appear next time engine is switched on.

Tire Pressure Monitoring System for North America

Note

- *Only carry out the tire pressure monitoring display indicator lamp basic setting after the tire pressures have been set to the correct values.*
- *If no pressure loss and no tire damage is detected after a tire pressure warning, the erroneous warning can be eliminated by a basic setting.*

Tire Pressure Monitoring Display Indicator Lamp - K220- has a yellow indicator light in instrument cluster - arrow-.



Perform the following adaptation after changing tire pressures or replacing one or more wheels:

– Connect the Vehicle Diagnostic Tester Refer to ⇒ “3.4 Vehicle Diagnostic Tester , Connecting”, page 14 .

– Turn on the ignition.

– Touch button/field on screen: `Guided Fault Finding`.

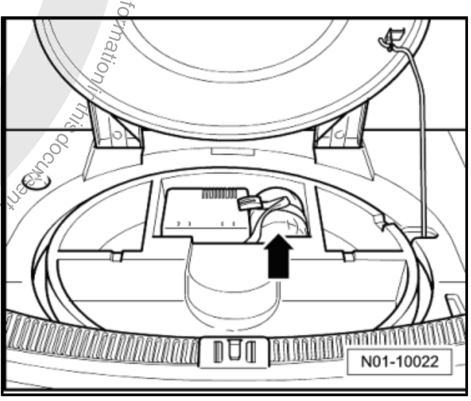
– Select vehicle data.

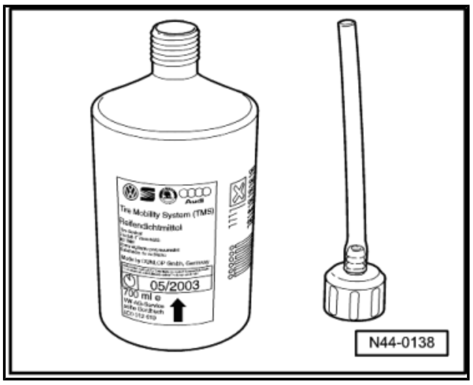
All control modules present are interrogated.

– Follow the instructions from the Vehicle Diagnostic Tester in “ Guided Fault Finding”.

4.34 Tire Repair Kit, Checking Bottle for Damage or Usage, Check and Entering Tire Sealant Expiration Date

Tire repair kit is located in spare wheel well - arrow-.





The tire repair kit contains, aside from the compressor, a tire filling bottle with tire sealant.

Note

- *The tire sealant in the bottle has a limited shelf-life.*
- *The expiration date - arrow- is written on the bottle.*

In this example, the expiration date, 05/2003, has passed. Replace the bottle.

– Check the expiration date and enter in maintenance tables.

– Replace tire sealant, if expiration date has been reached.

Caution

- *Tire sealant must not be older than 4 years.*
- *If the bottle was opened, for example if a tire went flat, it must be replaced.*

Note

- *Residual tire sealant or full bottles, which have expired, must be disposed of.*
- *Old tire sealant or residual sealant must not be mixed and disposed of with other fluids.*
- *Follow all disposal regulations.*

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4.35 Dust and Pollen Filter, Cleaning Housing and Removing and Installing Filter

Procedure

Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80 ; Removal and Installation

4.36 Headlamps, Checking and Adjusting

⇒ “4.36.1 Headlamps, Checking Adjustment”, page 75

⇒ “4.36.2 HID Headlamps, Performing Basic Setting”, page 79

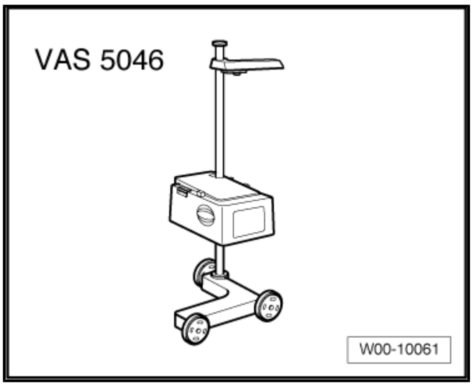
⇒ “4.36.3 Headlamps, Adjusting”, page 79

⇒ “4.36.4 Adjusting Fog Lamps and Other Auxiliary Headlamps”, page 81

4.36.1 Headlamps, Checking Adjustment

Special tools and workshop equipment required

- Headlamp Adjustment Device - VAS5046- or



- Headlamp Adjustment Device - VAS5047-
- Headlamp Adjuster - VAS5208A-
- Headlamp Adjuster - VAS5209A-
- Headlamp Adjuster - VAS5209B-
- Vehicle Diagnostic Tester

Checking and Adjusting Conditions:

- Tire pressure must be OK.
- Lenses must not be damaged or dirty.
- Reflectors and bulbs OK.
- Vehicle must be properly loaded.
- Move vehicle back and forth a few meters or bounce front and rear of vehicle several times up and down to settle suspension.
- Vehicle and headlamp adjuster must be on a level surface
- Vehicle and headlamp adjuster must be aligned.
- Inclination dimension must be set.
- If the vehicle is equipped with separate low beams and high beams, high beam must be adjusted extra. Note that the adjuster must be set to 0% when adjusting the high beams.
- On vehicles with HID headlamps, erase the DTC memory with the vehicle tester and bring the headlamp range control into Basic Setting before every headlamp adjustment. Refer to ⇒ “4.36.2 HID Headlamps, Performing Basic Setting”, page 79 .

– Following headlamp adjusting device operating instructions!

In the trim above the headlamp, inclination measurements are stamped in “ %”. Headlamps must be adjusted according to this information. Percentage information is based on a projection distance of 10 meters. For example: inclination of 1.0 % converts to approximately 10 cm.

On North America vehicles, set the inclination to 0.7 %.

Fog lamp angle dimension: “ 2.0 %”.

Information for vehicles with halogen headlamps:

manual headlamp range control (if applicable):

– Check the headlamp height adjustment by setting to the maximum level and observing the light.

– The headlamp range adjuster thumb wheel, if present, must be in `0`.

Note

- *Manual range control is not available in certain markets so the* `0` *setting is not used.*
- *Head lamp side adjustment is not possible on USA and Canada vehicles, and for this reason, cannot be turned. If the headlamp has been replaced, then a one time adjustment is permissible. After adjusting, seal off the screw for the lateral adjustment with a cap. Refer to the Electronic Parts Catalog (ETKA). Press the cap into the lateral adjustment opening.*

Load: Vehicle must be loaded with one person on the driver seat, weighing 165 lbs (75 kg), otherwise vehicle must be empty (curb weight).

The curb weight is the weight of the vehicle ready to be operated with filled fuel tank (at least 90 % filled), including the weight of all equipment usually carried in the car such as spare wheel, tools, car jack, fire extinguisher, etc.

If the fuel tank is not at least 90% full, adjust the weight as follows:

– Read fuel level from fuel gauge. Calculate additional weight needed using the following table. Place extra weight in luggage compartment.

Tank Filling Table

Fuel level according to fuel gauge	Additional weight in luggage compartment in lbs (Kg)
Up to 1/4	66 (30)
Up to 1/2	44 (20)
Up to 3/4	22 (10)
Full	0

Example:

If the fuel tank is half full, place a weight of 44 lbs (20 kg) in the luggage compartment.

Note

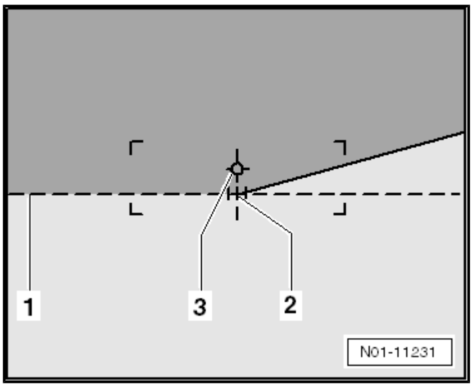
- *For the additional weight, use a suitable container filled with water or gravel (a 5 liter fuel can filled with water weighs approximately 5 kg).*
- *Make sure the there are kg markings on the container and that it cannot be opened.*
- *Place a cloth on the luggage compartment floor to protect it from getting dirty.*

Check Adjustment of Headlamps:

Note

- *With the low beams switched on, the horizontal light-dark border must not go past the setting line - 1-.*
- *The high beam light beam must lie on the center mark - 3-.*

Please check the following:

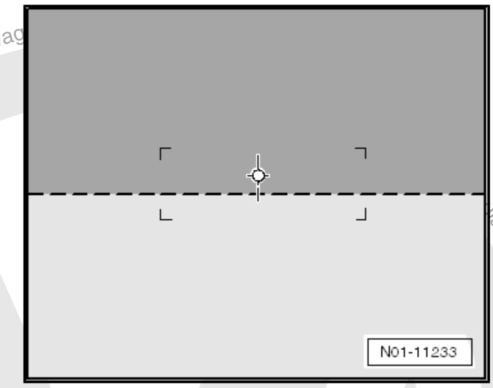


- With the low beam switched on check whether the horizontal light-dark border of the setting line - 1- contacts the test surface.
- Check whether the break-away point - 2- between the left horizontal part and the rising part on the right of the light-dark border runs vertically through the center point - 3-. The bright core of the light beam must be on the right of the vertical line.

Note

- ♦ *To make it easier to find break-away point - 2- cover and uncover left half of headlamp (as viewed when looking forward) a few times. Then check low beam again.*
- ♦ *After correct adjustment of low beams the center point of the main beam must lie on the center mark - 3-.*

Check Adjustment of Fog Lamps:

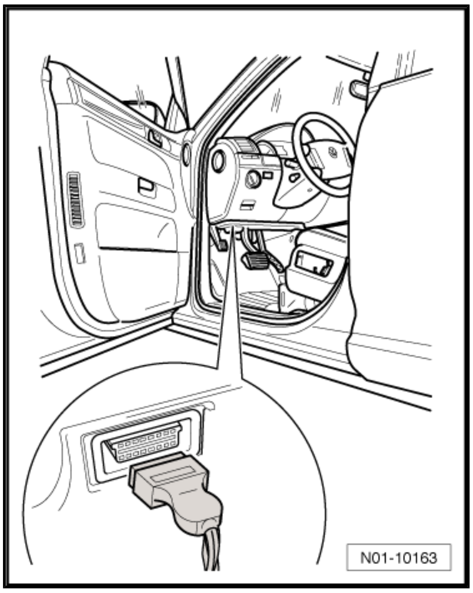


- Check whether the upper light-dark border touches the setting line and runs across the complete test screen width horizontally.

Other Additional Head Lamps

Accessory auxiliary headlamp systems must be checked and adjusted according to the guidelines valid for them.

4.36.2 HID Headlamps, Performing Basic Setting



- Connect the Vehicle Diagnostic Tester Refer to ⇒ “3.4 Vehicle Diagnostic Tester , Connecting”, page 14 .
- Switch on the ignition.
- Select “ Guided Fault Finding”

Enter vehicle information; all control modules are interrogated.

- Press the following selections in the order shown:

- Go To
- Functions and component selection
- Body
- Electrical Equipment
- 01 On Board Diagnostic (OBD) capable systems
- 55-Dynamic Headlamp Range Control
- J 431-Dynamic Headlamp Range Control, Functions
- J 431-Headlamp Range Control Module, basic setting
- Press the →

- Follow the steps on the Vehicle Diagnostic Tester and confirm the entry until the following text appears:

J 431– Headlamp Range Control Module, basic setting

- Press the →

- Follow the steps on the Vehicle Diagnostic Tester and confirm the entry until the following text appears:

J 431– Headlamp Range Control Module, basic setting

- Follow the steps of the Vehicle Diagnostic Tester.
- Check the headlamp adjustment and, if necessary, adjust the headlamps.
- Perform the function program Headlamp Range Control Module - J431- , basic setting, to the end.
- Adjusting headlamps. Refer to ⇒ “4.36.3 Headlamps, Adjusting”, page 79 .

4.36.3 Headlamps, Adjusting

- General information on gas-discharge lamp systems ⇒ page 79
- Left Headlamp, Adjusting, Golf from MY 2004: ⇒ page 80 .
- Left Headlamp, Adjusting, Golf Plus from MY 2005: ⇒ page 81 .

General Information on Gas-Discharge Lamp Systems:

The Xenon lamp system using a gas-discharge lamp that is filled with xenon gas.

For this reason, the headlamps with gas-discharge lamps are also called xenon headlamps.

There are different types of headlamps:

- Simple “ Xenon” headlamps

Simple “ Xenon” headlamps means the low beams are generated with “ one” lamp.

Simple “ Xenon” headlamps have an “ additional high beam lamp”

- “ Bi-Xenon” headlamps

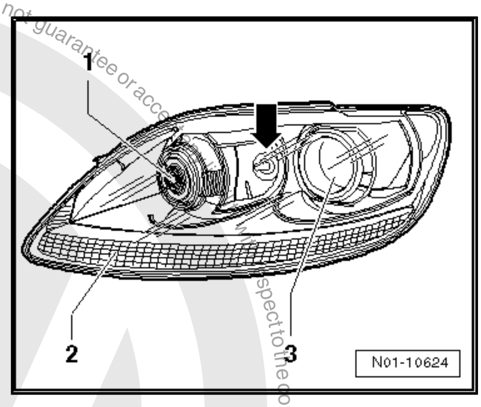
“ Bi-Xenon” means the low beams and high beams are generated with “ one” gas discharge lamp.

For this reason, with “ Bi-Xenon” headlamps, the high beam is automatically adjusted with the low beams.

“ Bi-Xenon light systems” are also always equipped with a headlamp range control system and headlamp washing system.

- AFT headlamp system

The AFS system is a lighting system with main headlamps, gas discharge lamps and static cornering light



Note

- *Vehicles with cornering light can be recognized by an additional reflector - arrow- between the turn signal - 1- and low beam module - 3-.*
- *The static cornering light only functions in conjunction with the low beams.*

AFS means Adaptive Front Lighting System

The headlamps with gas discharge lamps and cornering light have no “ additional high beam lamp”

For this reason, the high beams are automatically adjusted with the low beams on the “ AFS headlamp system”.

Note

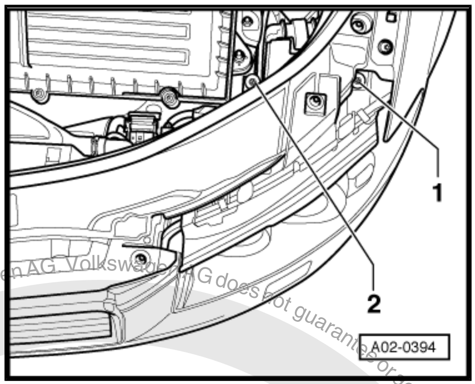
On vehicles with HID headlamps, perform the basic setting with the Vehicle Diagnostic Tester before every headlamp adjustment ⇒ “4.36.2 HID Headlamps, Performing Basic Setting”, page 79 .

Left Headlamp, Adjusting, Golf from MY 2004:

Note

- *Check whether both headlamps work evenly when operating the manual headlamp range adjuster.*
- *If the vehicle is equipped with separate low beams and high beams, high beam must be adjusted extra. Note that the adjuster must be set to 0% when adjusting the high beams.*

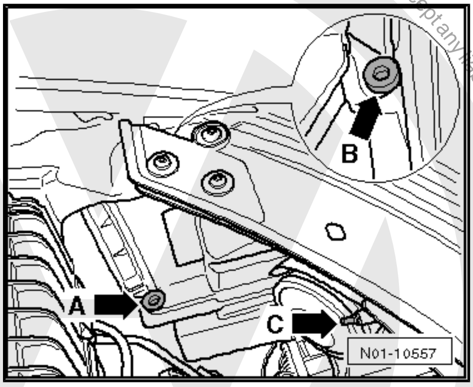
Adjustment screws for right headlamp are arranged symmetrically



- First adjust the low beam and high beam height adjustment screw - 2- to the test surface bright/dark boundary in the tester display.
- Then adjust the low beam and high beam side adjustment screw - 1- to the test surface bright/dark boundary in the tester display.

Left Headlamp, Adjusting, Golf Plus from MY 2005:

Adjustment screws for right headlamp are arranged symmetrically



- First adjust the low beam and high beam height adjustment screw - A- to the test surface bright/dark boundary in the tester display.
- Then adjust the low beam and high beam side adjustment screw - B- to the test surface bright/dark boundary in the tester display. Use Intake Manifold Socket - T10197- for this.

4.36.4 Adjusting Fog Lamps and Other Auxiliary Headlamps

- Fog lights in headlamps ⇒ page 81
- Right Fog Lamp in Bumper, Golf from MY 2004: ⇒ page 81 .
- Fog lights in bumper, right (Golf GT) ⇒ page 82
- Fog lights in bumper, right (Golf GTI) ⇒ page 83
- Left Fog Lamp in Bumper, Golf Plus from MY 2005: ⇒ page 83 .
- Other auxiliary headlamps ⇒ page 83

Fog Lights in Headlamps

Note

The adjustment of fog lamps is performed automatically when adjusting headlamps.

Right Fog Lamp in Bumper, Golf from MY 2004:

Adjusting screw on left fog light is arranged symmetrically.

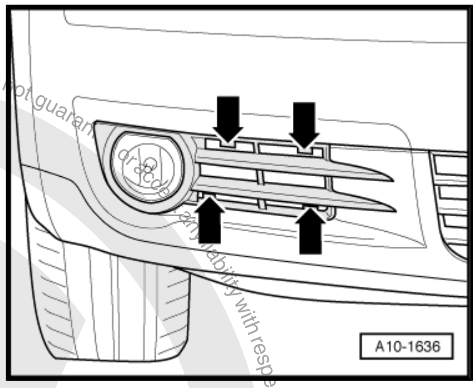
– Set the angle dimension on the headlamp adjusting unit.

- Fog lamp angle dimension: “ 2.0%”.

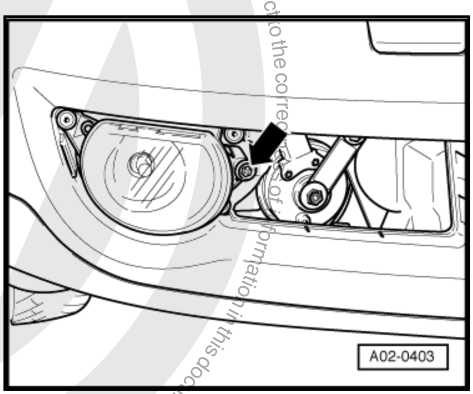
Note

Percentage information is based on a projection distance of 10 meters.

– Unclip retaining tabs - arrows- and remove cover on lower part of bumper.



– To adjust the lamp range, turn the adjustment screw - arrow-.



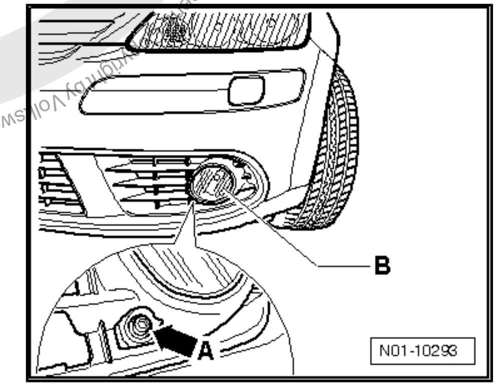
Lateral adjustment is not possible.

Fog Lights in Bumper, Right (Golf GT)

Adjusting screw on left fog light is arranged symmetrically.

– Set the angle dimension on the headlamp adjusting unit.

- Fog lamp angle dimension: “ 2.0%”

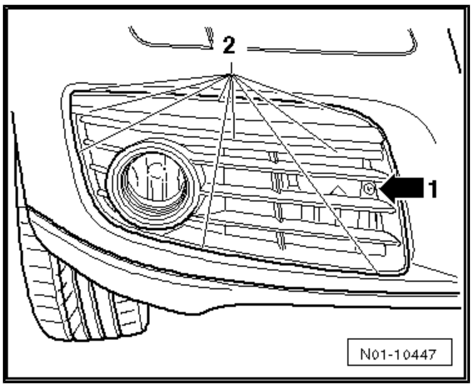


Note

Percentage information is based on a projection distance of 10 meters.

– Remove screw - 1-.

– Unclip retaining tabs - 2- and remove cover on lower part of bumper.

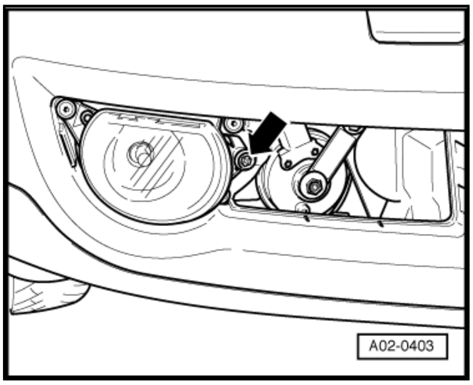


Note

Retaining tabs are partially seated very securely. Therefore, be very careful when removing cover to avoid breaking retaining tabs.

To adjust the lamp range, turn the adjustment screw - arrow-.

– Secure cover in reversed sequence.



Fog Lights in Bumper, Right (Golf GTI)

Adjusting screw on left fog light is arranged symmetrically.

– Set the angle dimension on the headlamp adjusting unit.

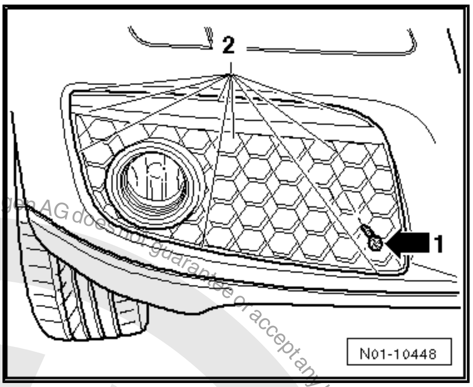
- Fog lamp angle dimension: “ 2.0%”

Note

Percentage information is based on a projection distance of 10 meters.

– Remove screw - 1-.

– Unclip retaining tabs - 2- and remove cover on lower part of bumper.

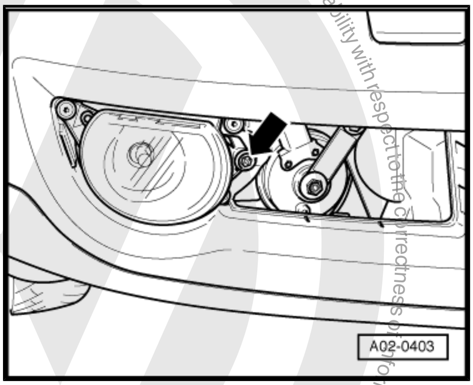


Note

Retaining tabs are partially seated very securely. Therefore, be very careful when removing cover to avoid breaking retaining tabs.

To adjust the lamp range, turn the adjustment screw - arrow-.

– Secure cover in reversed sequence.



Left Fog Lamp in Bumper, Golf Plus from MY 2005:

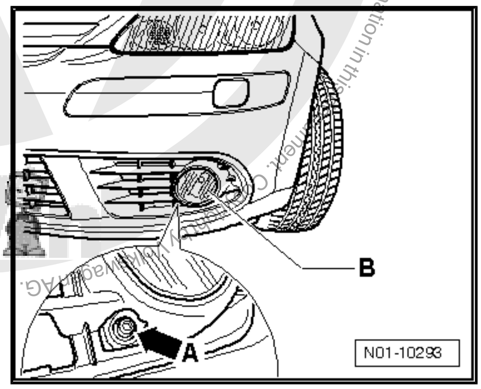
– Set the angle dimension on the headlamp adjusting unit.

- Fog lamp angle dimension: “ 2.0%”

Note

Percentage information is based on a projection distance of 10 meters.

– To adjust fog light beam width - B-, turn adjusting screw - arrow A-.



Other Auxiliary Headlamps

Accessory auxiliary headlamp systems must be checked and adjusted according to the guidelines valid for them.

4.37 Service Interval Display, Resetting

Resetting the service interval display using the Vehicle Diagnostic Tester , refer to ⇒ “4.37.1 Reset the Service Interval Display using Vehicle Diagnosis Tester ”, page 84 .

Resetting the service interval display using the Vehicle Diagnostic Tester , refer to ⇒ “4.37.2 Reset the Service Interval Display without the Vehicle Diagnostic Tester ”, page 85 .

For additional information regarding the service interval display refer to ⇒ “2.1.3 Service Interval Display”, page 5

Service interval display must be reset (adapted) at

- ♦ Delivery Inspection as well as
- ♦ Each oil change and interval service

(adapted)!

Note

The service interval display can also be reset manually. Make sure the service interval display is coded to fixed intervals, that is, every 15,000 km or 12 months. The adaptation channel for the oil quality will also change when doing this.

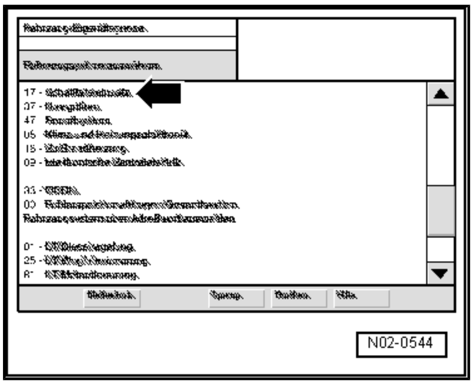
4.37.1 Reset the Service Interval Display using Vehicle Diagnosis Tester

(adapted)!

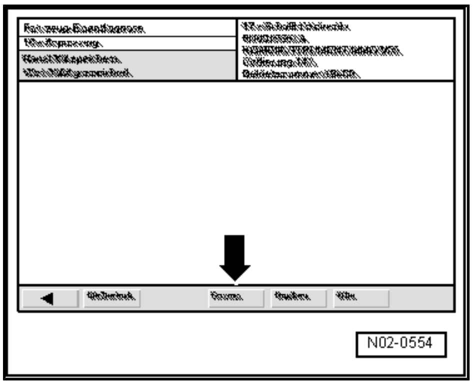
- – Connect the Vehicle Diagnosis Tester Refer to ⇒ “3.4 Vehicle Diagnostic Tester , Connecting”, page 14 .
- – Switch on the ignition.
- – Touch button/field on screen: » GUIDED FUNCTIONS«.

If the displays indicated in the procedure are not shown on the display: refer to the Operating Instructions for the Vehicle Diagnosis Tester

- – Press [>] button to confirm.
- – Select in succession:
- ♦ Brand
- ♦ Type
- ♦ Model year
- ♦ Engine code
- – Confirm vehicle identification.
- – Select in succession:



- “ Instrument cluster” - ARROW-.
- “ Rest service interval display”.

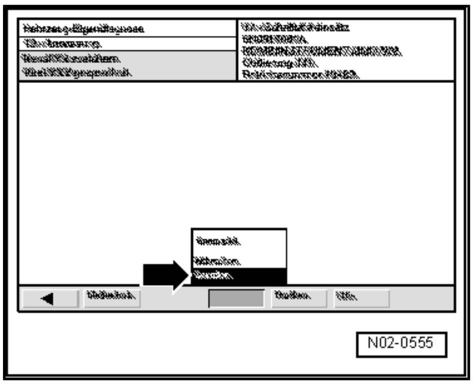


– Perform the adaptation following the “ Guided Functions” prompts.

End Adaptation

Indicated on display:

– Press the `Go to` button - arrow- on the display.



Indicated on display:

– Press `End` button - arrow- on display.

– Press `Exit` button in exit menu.

– Turn off the ignition and disconnect the diagnostic connector.

– Switch on the ignition.

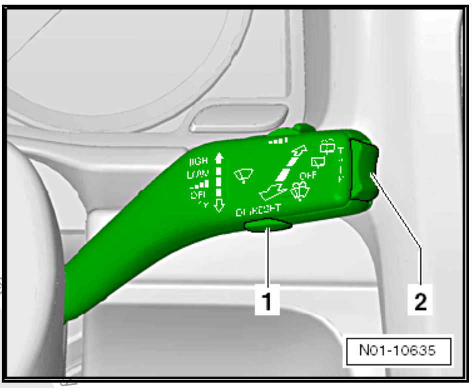
After turning on the ignition, no service will be indicated in the odometer display of the instrument panel insert.

4.37.2 Reset the Service Interval Display without the Vehicle Diagnostic Tester

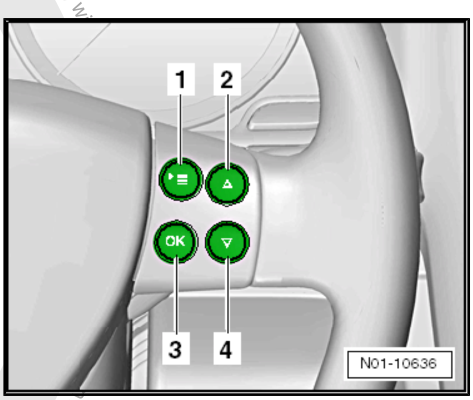
Note

The service interval display can also be reset manually. Make sure the service interval display is coded to fixed intervals, that is, every 15,000 km or 12 months. The adaptation channel for the oil quality will also change when doing this.

Using the Rocker Switch on the Windshield Wiper Lever or the Button in the Multifunction Steering Wheel



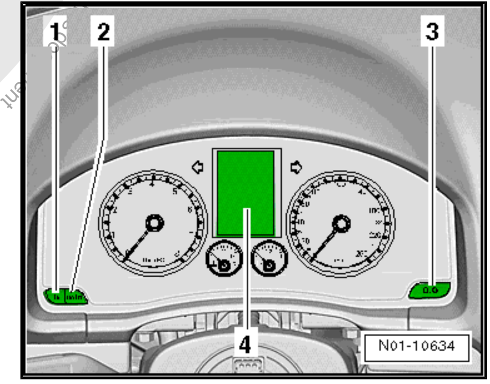
– Using the rocker switch, select the “ settings” menu, or



– press the button - 1- in the multifunction steering wheel continually until the “ Settings” menu is displayed.

– Once in the Service submenu, select “ Reset” and then press the “ OK button” - 1- either in the windshield wiper lever or in the multifunction steering wheel - 3- to reset the service interval display.

Using the Buttons in the Instrument Cluster



– With the ignition switched off, hold the `0.0` - 3- button pressed.

– Turn on the ignition. The Service Interval Display is now in the Reset mode.

– Release the `0.0` - 3- button and within 20 seconds, press the `min` - 2- for the clock one time briefly. After a brief period, the display switches back to the normal display.

4.38 Service Interval Display, Recoding

– Connect the Vehicle Diagnostic Tester Refer to ⇒ “3.4 Vehicle Diagnostic Tester , Connecting”, page 14 .

– Switch on the ignition.

– Touch button/field on screen: “ GUIDED FUNCTIONS”.

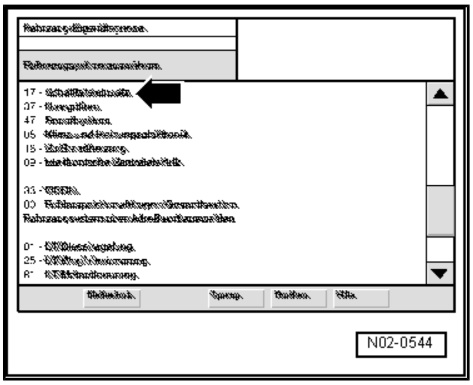
If the displays indicated in the procedure are not shown on the display: refer to the Operating Instructions for the Vehicle Diagnostic Tester

– Select in succession:

- Brand
- Type
- Model year
- Engine code

– Confirm vehicle identification.

If the vehicle identification procedure was performed correctly, press `>` button for confirmation.



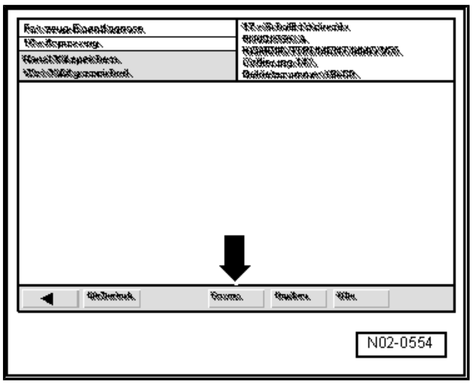
– Select in succession:

♦ “ Instrument cluster” - ARROW-.

♦ “ Adapt service interval extension”.

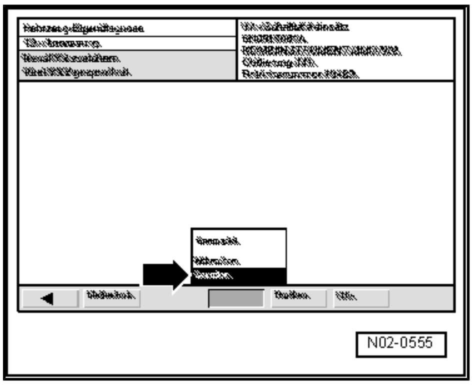
– Perform the adaptation following the “ Guided Functions” prompts.

End Adaptation



Indicated on display:

– Press the `Go to` button - arrow- on the display.



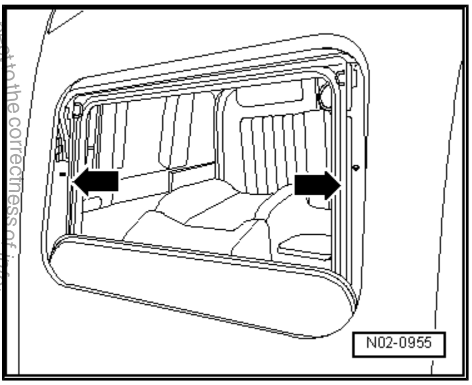
Indicated on display:

– Press `End` button - arrow- on display.

– Press `Exit` button in exit menu.

– Turn off the ignition and disconnect the diagnostic connector.

4.39 Sunroof, Checking Function, Cleaning and Lubricating Guide Rails



Perform the following:

– Check sunroof functionality.

– Clean the guide rails - arrows- and then lubricate them with paste G 060 751 A2.

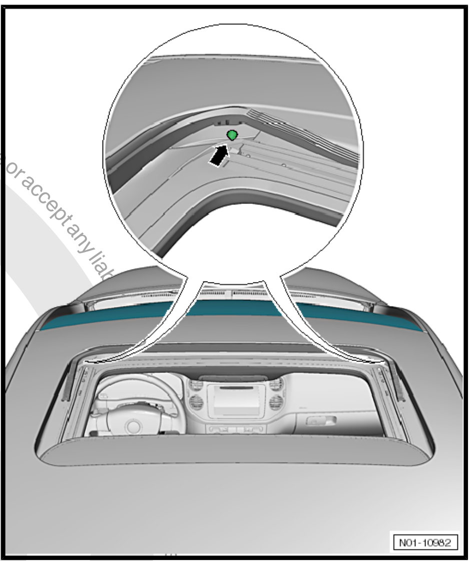
4.40 Sunroof Water Drains, Checking and Cleaning

Special tools and workshop equipment required

- Drain Snake - VAS6620-

Perform the following:

– Open the sunroof.



– Make sure the sunroof drain holes - arrows- are not blocked with debris. Clean them if necessary.

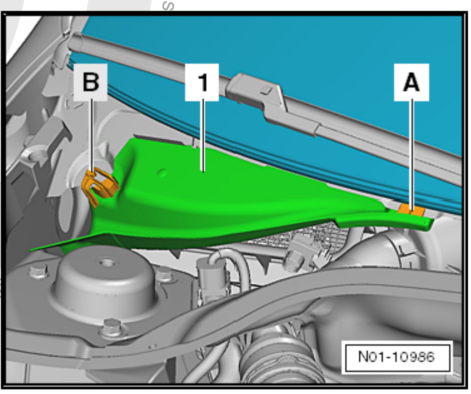
– Using tap water, pour water through the sunroof drains making sure the same amount of water is coming out of the wheel housing.

If this is happening, then the check is completed. If only a little water is coming out, or no water at all, then perform the following:

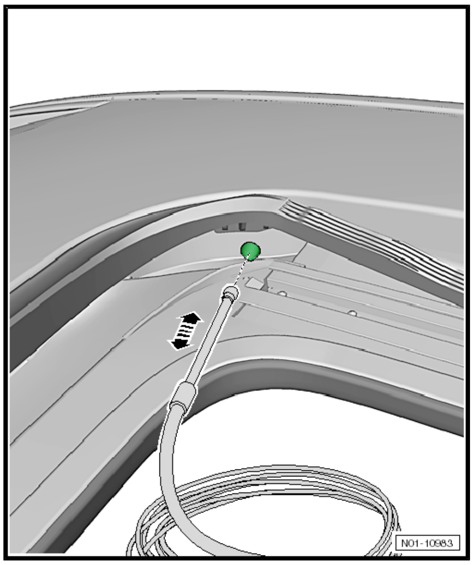
– Remove the plenum chamber cover: Refer to ⇒ Body Exterior; Rep. Gr. 64 ; Removal and Installation .

Note

Removing and installing the plenum chamber is a separate charge.

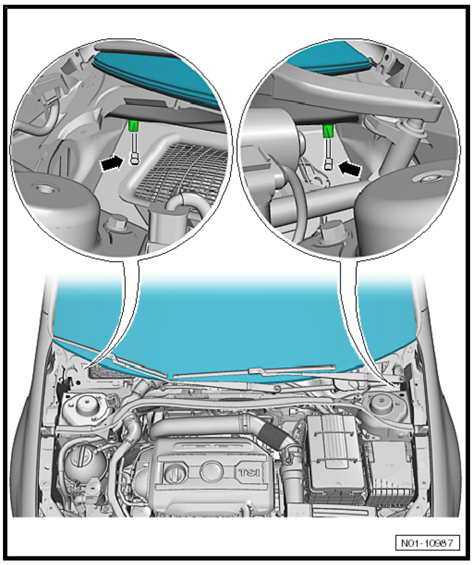


– Open the latches - A and B- and remove the cover - 1-.



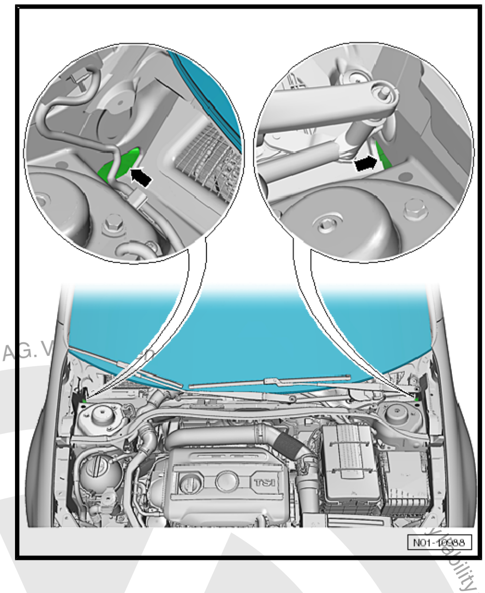
– Move the Drain Snake - VAS6620- back and forth up to the drain valves and push out any dirt.

- The drains - arrows- are located on the left and right sides of the plenum chamber.



- Make sure the plenum chamber drains - arrows- are not blocked with dirt. Clean them if necessary.
- Using tap water, pour water through the sunroof drain holes one more time.

Install in reverse order of removal.



4.41 Windshield and Headlamp Washer System, Checking Function

⇒ “4.41.1 Fluid, Checking Freeze Protection and Filling”, page 89

⇒ “4.41.2 Windshield Washer System, Checking and Adjusting Spray Nozzles”, page 91

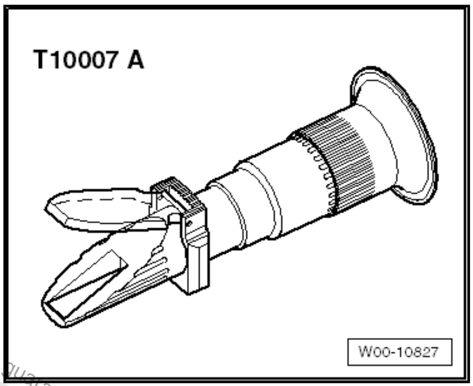
⇒ “4.41.3 Headlamp Washer System, Checking and Adjusting Nozzles,Golf from MY 2004”, page 93

⇒ “4.41.4 Headlamp Washer System, Checking and Adjusting Nozzles, Golf Plus from MY 2005”, page 93

4.41.1 Fluid, Checking Freeze Protection and Filling

Special tools and workshop equipment required

- ♦ Refractometer - T10007 A-

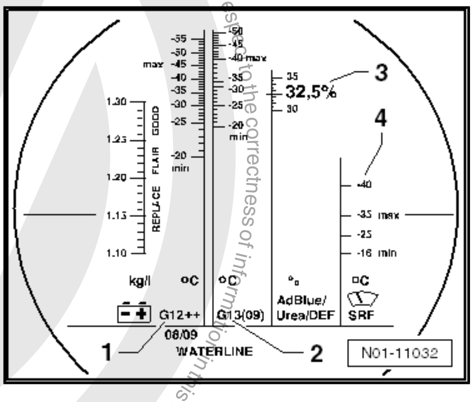

T10007 A
W00-10827

Read the bright/ark boundary to obtain an accurate reading for the following tests. Place a drop of water on the glass to improve the readability of the bright/dark boundary. The bright/dark boundary can be clearly recognized on the “ WATERLINE”.

– Check the concentration of the anti-freeze additive using Refractometer - T10007A- (operating instructions).

The scale - 4- of the refractometer is designed specifically for Windshield Washer Concentrate - G 052 164- .

Mixture Ratio:


1.30
1.25
1.20
1.15
1.10
REPLACE
FLAIR
GOOD
kg/l
G12++
-55
-50
max -45
-40
-35
-30
-25
-20
min
°C
-50
-45
-40 max
-35
-30
-25
-20
min
°C
G13(09)
35
32,5%
30
%
AdBlue/
Urea/DEF
-40
-35 max
-25
-16 min
°C
SRF
08/09
WATERLINE
1
2
3
4
N01-11032

Freeze protection to	Window washer fluid concentrate G 052 164	Water
in summer	1 part	4 part
3.2 °F(-16 °C)	1 part	2 part
-31 °F (-35 °C)	1 part	1 part
- 40 °F (-40 °C)	2 part	1 part

Filling-up with Fluid:

The windshield washer system fluid reservoir must be filled.

Use only Windshield Washer Fluid Concentrate - G 052 164- when filling the windshield washer fluid reservoir.

Note

- *The Windshield Washer Fluid Concentrate - G 052 164- protects the spray jets, fluid reservoir and hoses from freezing.*
- *Vehicles with fan type spray jets must be filled with Windshield Washer Fluid Concentrate - G 052 164- as this fluid has a low viscosity at minus temperatures. The complicated spray jet system could otherwise become blocked due to crystallized washer fluid that can affect the fan pattern of the spray jet. Windshield Washer Fluid Concentrate - G 052 164- assures that the fan type spray nozzles remain functional even at low temperatures.*
- *Use Windshield Washer Concentrate - G 052 164- in the warmer periods of the year also. The powerful cleanser removes wax and oil deposits from the windows.*
- *Freeze protection (anti-freeze) must be guaranteed to approximately -13 °F (-25 °C) (approximately -31°F (-35 °C)) in countries with an arctic climate) in the washer system.*

4.41.2 Windshield Washer System, Checking and Adjusting Spray Nozzles

Note

- *If the spray field is uneven due to contamination in the spray nozzle, remove the nozzle. Refer to ⇒ Electrical Equipment; Rep. Gr. 92 ; Removal and Installation and flush them with water opposite the spraying direction.*
- *Subsequently blowing through in the opposite direction of the spray flow with compressed air is permitted.*

Caution

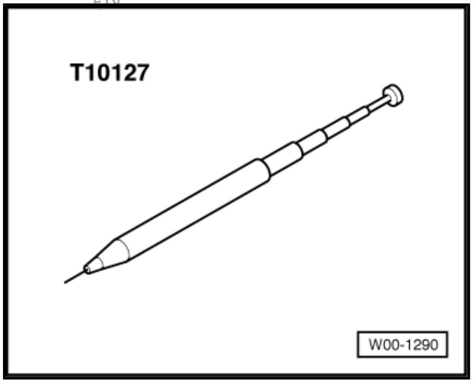
- *Do not use solid objects to clean the spray nozzles!*
- *Do not use a needle or similar under any circumstance to adjust spray nozzles, otherwise the water hoses in the spray nozzles may be damaged!*

Windshield washer system spray nozzles: ⇒ page 92 .

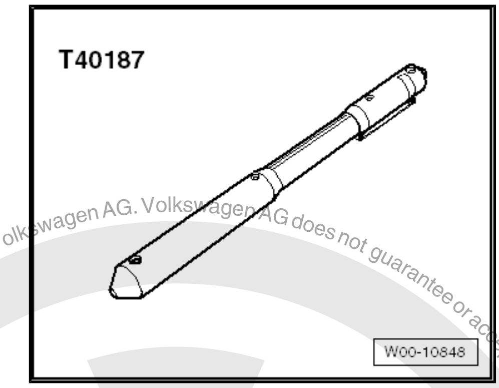
Rear window washer spray nozzles: ⇒ page 92 .

Special tools and workshop equipment required

- Washer Jet Setting Tool - T10127- equipped with needle 3125/5 A

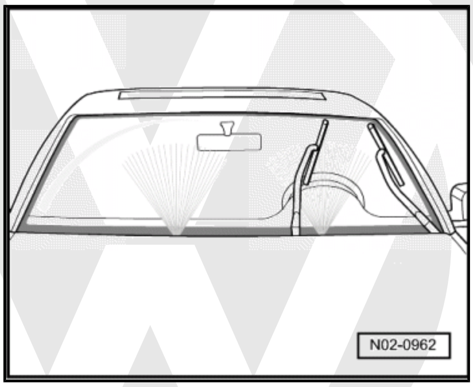


- Washer Jet Setting Tool - T40187-



Windshield Washer System Spray Nozzels:

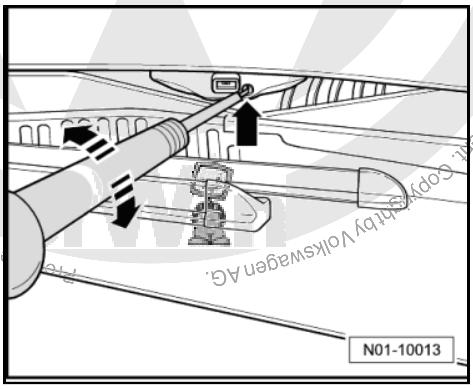
The washer nozzles are preset. Small height adjustments can be made.



– If both spray fields are not at same height, adjust spray direction upward or downward as follows:

– Adjust the spray stream by turning at the adjuster - arrow- with a screwdriver.

- “ Clockwise” deeper adjustment.
- “ Counter-clockwise” higher adjustment.

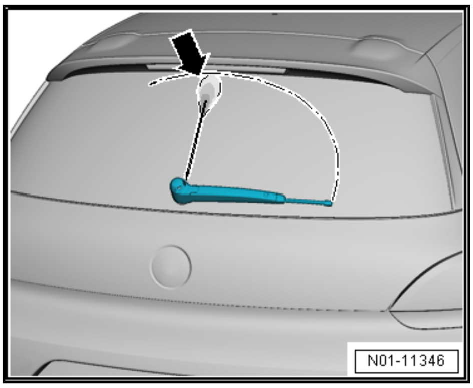


Rear Window Washer Spray Nozzles: .

Note

It is only possible to adjust spray nozzles diagonally, that is, in direction of rear window or opposite. A lateral adjustment in direction of wiper arm rotation is not possible. Spray nozzles are secured in this direction at the factory.

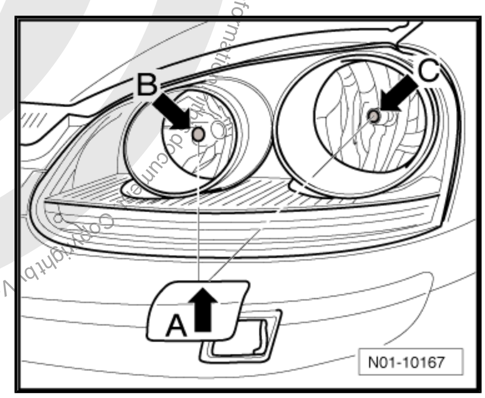
– Adjust nozzle with Washer Jet Setting Tool - T10127- or Washer Jet Setting Tool - T40187- so that fluid sprays onto upper third of rear window, as shown.



4.41.3 Headlamp Washer System, Checking and Adjusting Nozzles,Golf from MY 2004

Headlamp Washer System, Checking and Adjusting Nozzles, Golf from MY 2005. Refer to ⇒ “4.41.4 Headlamp Washer System, Checking and Adjusting Nozzles, Golf Plus from MY 2005”, page 93 .

> ⚠ Caution
>
> *The spray nozzles can be checked for functionality, but they cannot be adjusted.*



Spray jet adjustment for left headlamp (right headlamp is identical but reversed)

Spray Jet Setting, Checking

- Turn on the driving lamps.
- Operate the windshield washer system.

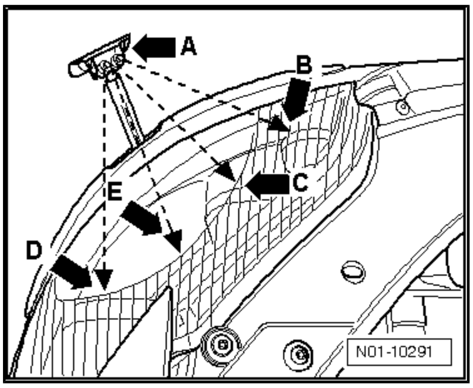
Headlamps are washed, if windshield wiper lever is held at least 1.5 seconds in “ wiping position”.

The spray should hit the center of the headlamp lens, see - B- and - C-.

If the spray pattern differs from the specification, perform a repair.

4.41.4 Headlamp Washer System, Checking and Adjusting Nozzles, Golf Plus from MY 2005

> ⚠ Caution
>
> *The spray nozzles can be checked for functionality, but they cannot be adjusted.*



Spray jet adjustment for left headlamp (right headlamp is identical but reversed)

Spray Jet Setting, Checking

- Turn on the driving lamps.
- Operate the windshield washer system.

Headlamps are washed, if windshield wiper lever is held at least 1.5 seconds in “ wiping position”

Spray from windshield washer nozzles - A- should spray onto center of head lights, see - B-, - C-, - D- and - E-.

If the spray pattern differs from the specification, perform a repair.

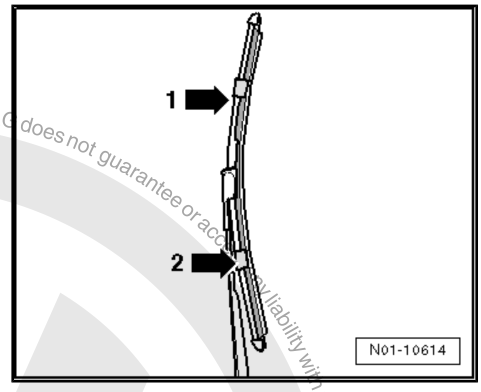
4.42 Windshield Wiper Protectors, Removing

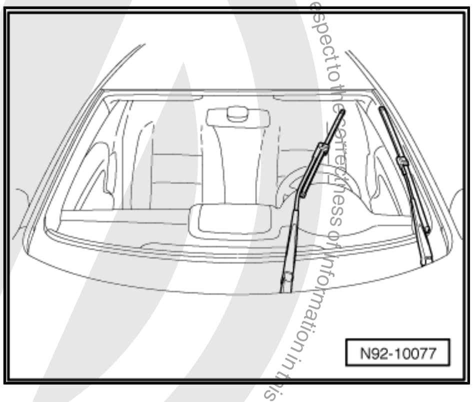
There are currently three ways to remove a wiper protector from a wiper blade or to replace a transport wiper arm.

Version 1

These wiper arms with protective rails can be identified by the two fasteners - arrows- that secure the protective rails on the wiper arm.

Perform the following procedure:

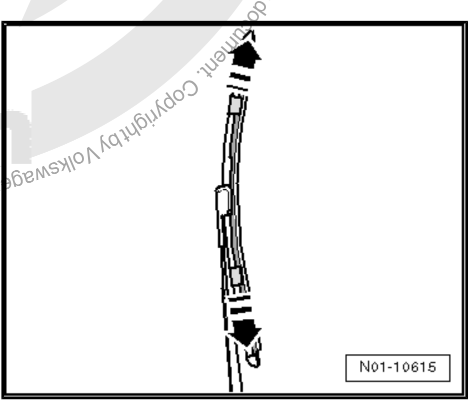




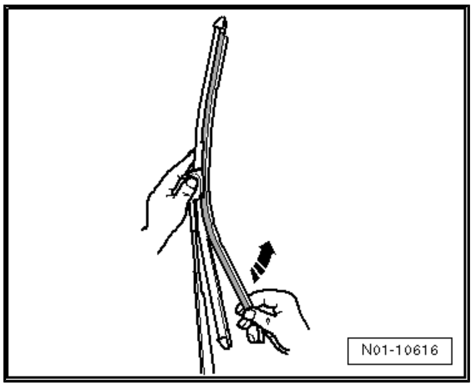
- Place the windshield wiper in the service position. To do this, switch the ignition on and off again once with the hood closed. Then press the wiper lever and the windshield wipers will stay in the service position.
- Remove the right windshield wiper from the windshield and fold it upward.

Caution

To avoid damage, only hold the windshield wiper at the wiper joint and do not pull on the wiper blade.



- Now pull the upper fastener upward and the lower fastener downward - arrows-.



- From below, remove the protective rail upward from the wiper blade.
- Place the wiper arm carefully on the windshield.

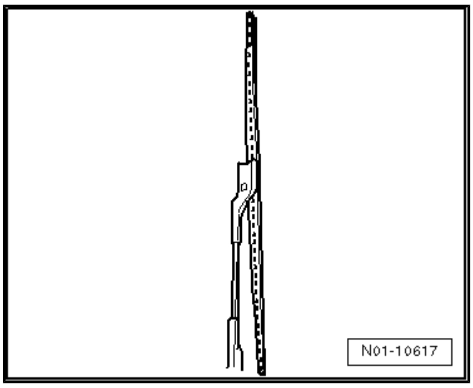
Perform the same steps with the left windshield wiper.

- Now move the windshield wipers back into the park position by switching the ignition on and tapping the wiper lever. Switch the ignition off.

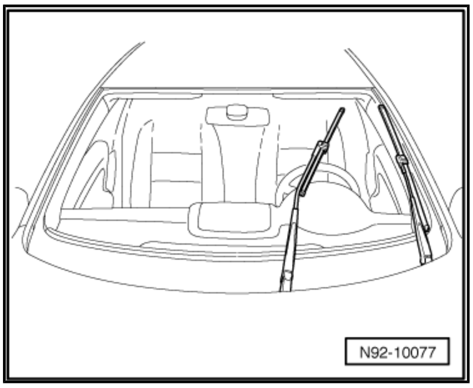
Version 2

These transport wiper arms can be identified by their lack of a wind deflector.

Perform the following procedure:



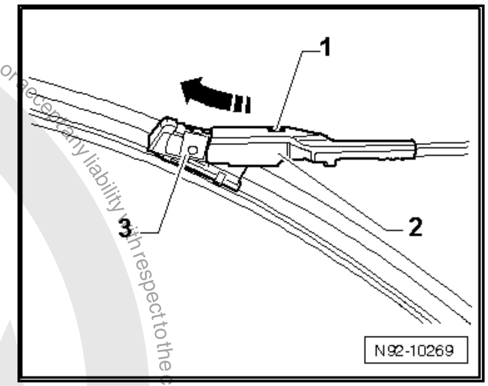
- Place the windshield wiper in the service position. To do this, switch the ignition on and off again once with the hood closed. Then press the wiper lever and the windshield wipers will stay in the service position.
- Remove the right windshield wiper from the windshield and fold it upward.



⚠ **Caution**

To avoid damage, only hold the windshield wiper at the wiper joint and do not pull on the wiper blade.

- Depending on the version, rotate the wiper arm with the lip upward and remove it or loosen the arm at the joint - 3- by pressing the locking mechanism - 1- in the retainer - 2- and removing the wiper arm.
- Slide the new wiper arm into the retainer and make sure the locking mechanism engages audibly.



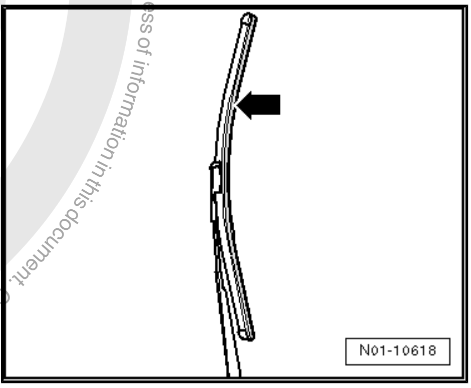
Perform the same steps with the left windshield wiper.

- Place the wiper arm carefully on the windshield.
- Now move the windshield wipers back into the park position by switching the ignition on and tapping the wiper lever. Switch the ignition off.

Version 3

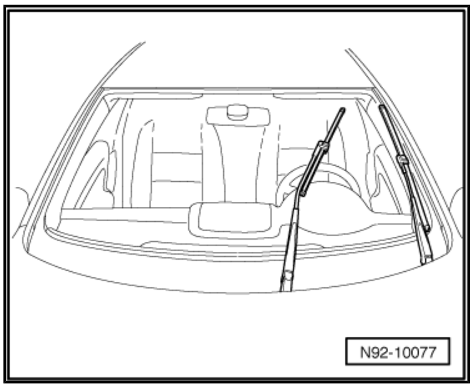
These wiper arms with protective rails can be identified by the fact that the protective rail - arrow- slides onto the wiper blade.

Perform the following procedure:



– Place the windshield wiper in the service position. To do this, switch the ignition on and off again once with the hood closed. Then press the wiper lever and the windshield wipers will stay in the service position.

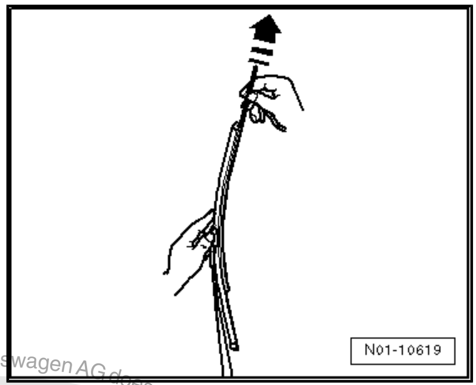
– Remove the right windshield wiper from the windshield and fold it upward.



Caution

To avoid damage, only hold the windshield wiper at the wiper joint and do not pull on the wiper blade.

– Pull the protective rail upward from the wiper blade.



Perform the same steps with the left windshield wiper.

– Place the wiper arm carefully on the windshield.

– Now move the windshield wipers back into the park position by switching the ignition on and tapping the wiper lever. Switch the ignition off.

4.43 Windshield Wiper Blades, Checking End Position

⇒ “4.43.1 Front Windshield Wiper Blades, Golf from MY 2004, Checking Park Position”, page 96

⇒ “4.43.2 Front Windshield Wiper Blades, Golf Plus from MY 2005, Checking Park Position”, page 97

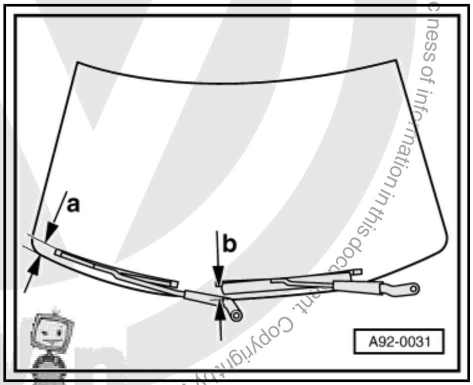
⇒ “4.43.3 Rear Wiper Blade, Checking Park Position”, page 97

4.43.1 Front Windshield Wiper Blades, Golf from MY 2004, Checking Park Position

– Check if the windshield wiper blade tips are positioned with the following distances to the plenum chamber cover at the bottom of the windshield:

◆ Dimension - a- = 0 to 10 mm

◆ Dimension - b- = 0 to 10 mm



Note

Placement is similar for right-hand drive vehicles.

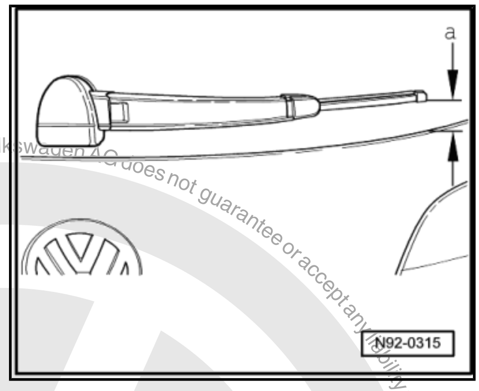
– If necessary, adjust wiper arm:

Adjust the wiper blades. Refer to ⇒ Electrical Equipment; Rep. Gr. 92 ; Description and Operation .

4.43.2 Front Windshield Wiper Blades, Golf Plus from MY 2005, Checking Park Position

Adjust the wiper blades. Refer to ⇒ Electrical Equipment; Rep. Gr. 92 ; Description and Operation .

4.43.3 Rear Wiper Blade, Checking Park Position

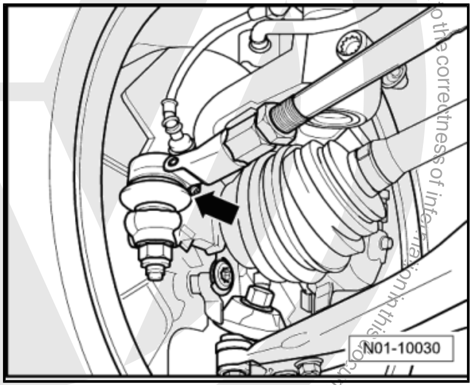


- Switch rear windshield wipers on and off and allow to run to end position.
- Check whether blade points rest in with the following distance to lower edge of window.

♦ Dimension - a- = 23 mm

Adjust the wiper blades. Refer to ⇒ Electrical Equipment; Rep. Gr. 92 ; Description and Operation .

4.44 Tie Rod Ends, Checking Play, Security and Joint Boots



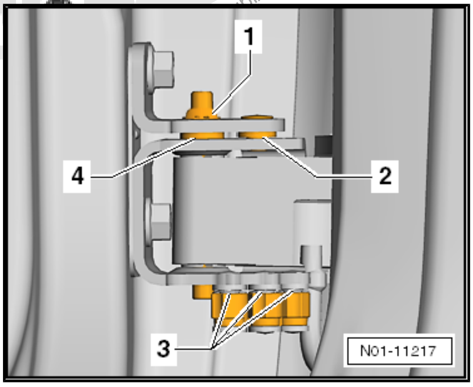
Perform the following:

- With vehicle raised (wheels off ground) check tie rods by moving tie rods and wheels.

Play: no play

- Check attachments
- Check track rod joint boots - arrow- for damage and proper seating.

4.45 Door Arrester, Lubricating

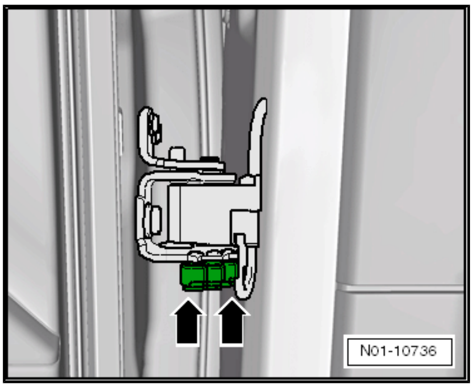


Perform the following procedure:

- Lubricate the door arrester with Universal Oil Spray - G 000 115 A2- at the following locations: - 1-, - 2-, - 3-, - 4-.

Move the door back and forth several times so that the universal oil coats the entire door arrester.

- Wipe off any excess universal oil with a cloth.
- Coat the door arrester with Paste - G 000 150- where indicated with the - arrow-.



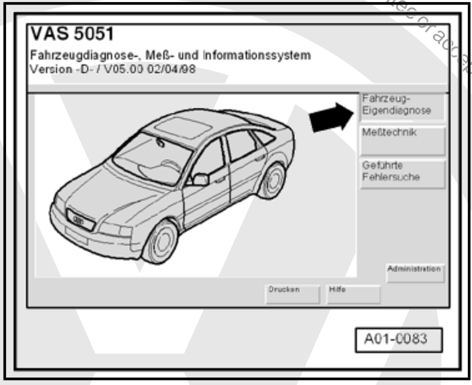
4.46 Transport Mode, Deactivating

- Connect the Vehicle Diagnosis Tester Refer to ⇒ “3.4 Vehicle Diagnostic Tester , Connecting”, page 14 .
- Turn on the ignition

Indicated on display:

Select Operating Mode

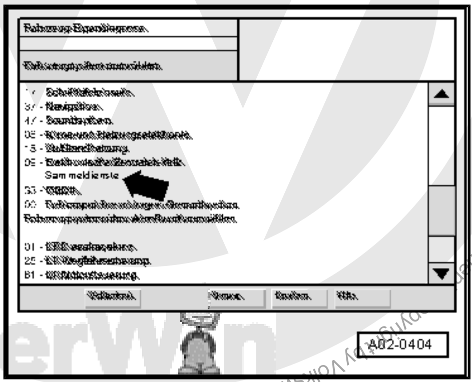
- Press button for » OBD« on display.


VAS 5051
Fahrzeugdiagnose-, Meß- und Informationssystem
Version -D- / V05.00 02/04/98
Fahrzeug-Eigendiagnose
Meßtechnik
Geführte Fehlersuche
Administration
Drucken
Hilfe
A01-0083

If the displays indicated in the procedure are not shown on the display: refer to the Operating Instructions for the Vehicle Diagnosis Tester

Indicated on display:

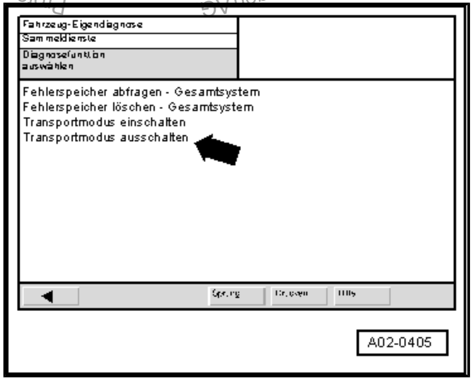
- Press “ Grouped services” on display.


Sammeldienste

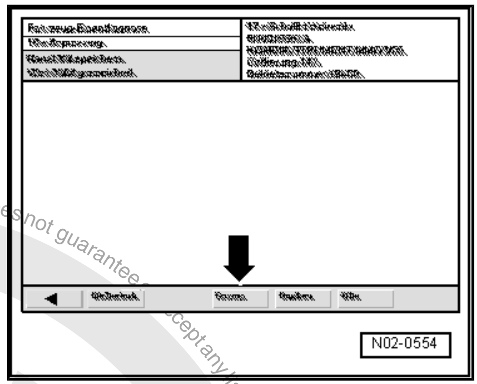
Indicated on display:

- Press “ Switch off transport mode” on display.

End Output

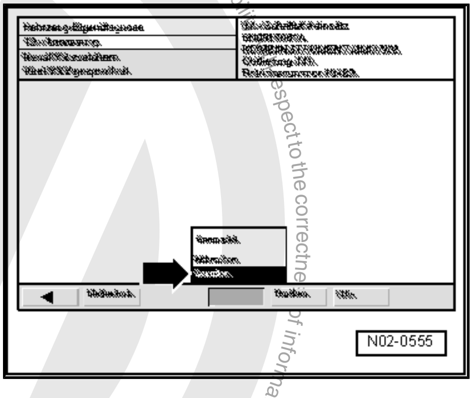

Fahrzeug-Eigendiagnose
Sammeldienste
Diagnosefunktion auswählen

Fehlerspeicher abfragen - Gesamtsystem
Fehlerspeicher löschen - Gesamtsystem
Transportmodus einschalten
Transportmodus ausschalten



Indicated on display:

– Press the `Go to` button - arrow- on the display.



Indicated on display:

– Press the `End` - arrow- button on the screen.

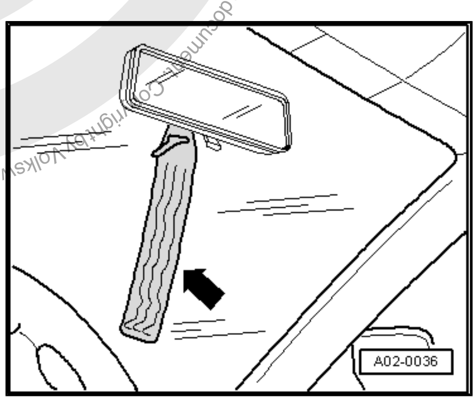
– Press the `Exit` button in the exit menu.

– Turn off ignition.

Note

The Vehicle Diagnosis Tester must remain connected for other testing.

4.47 Transport Protection, Removing Locking Pieces from Front Axle Struts



In vehicles with sport suspension, locking pieces are installed in springs of front axle. These models can be identified by a tag attached at the mirror - arrow-.

Note

Locking pieces should prevent vehicle from bouncing when being driven on to an automobile transport or railroad car and thereby become damaged.

> **WARNING**
>
> ***Locking pieces must always be removed before delivering the vehicle! An “Attention!” hanging tag is secured to interior mirror to make this point absolutely clear.***

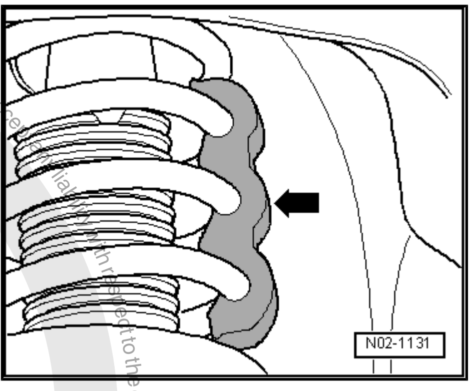
Perform the following:

Note

- *It is not necessary to remove the wheels.*
- *Be careful not to damage surface of coil springs.*

– Relieve load on coil spring by raising vehicle on lifting platform.

– Press locking piece - arrow- from coil spring.



4.48 Underbody, Underbody Components, Checking for Damage

When checking the underbody protection also check wheel wells and sill panels!

Make sure all the lines are secure in their mountings, all plugs are present and there is no damage to the underbody.

Note

Correct any malfunctions (repair procedure). This can help prevent corrosion and rust-through.

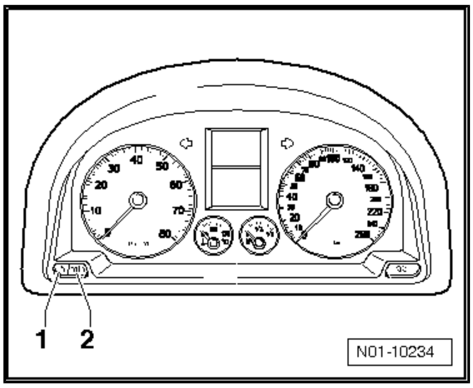
4.49 Clock and Date, Setting

Set Clock with Buttons Below Tachometer

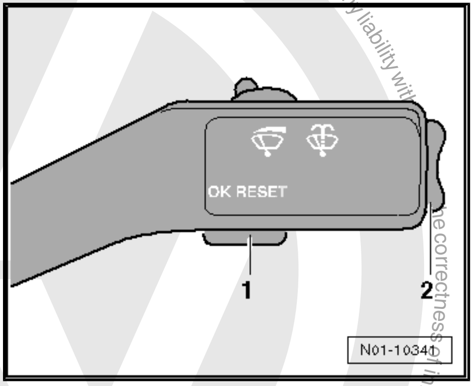
Adjustment buttons are located at left under tachometer.

– Press the left button - 1- to set the hour. Press button only briefly to advance by one hour.

– Press the right button - 2- to set the minutes. Press button only briefly to advance by one minute.

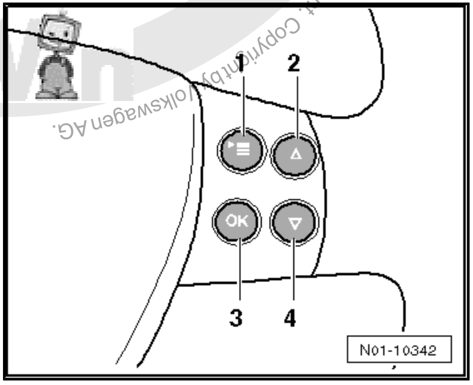


Set Hour and Date with Buttons on Windshield Wiper Lever



- Turn on the ignition.
- Press button - 2- for 2 seconds to go to main menu.
- Select “ Settings” menu with button - 2- and confirm with button - 1-.
- Select “ Clock” menu with button - 2- and confirm with button - 1-.
- Now mark menu time “ Hours” by pressing button - 1-, set correct hour with button - 2- and then confirm with button - 1-.
- Do the same with menu item “ Minutes”.
- You can leave the “ Settings” menu using menu item “ back”.
- Now select “ MFD” as actual display and confirm with button - 1-.
- Turn the ignition off.

Set Hour and Date with Buttons on Multi-Function Steering Wheel



- Turn on the ignition.
- Press button - 1- until “ Settings” menu appears.
- Then select menu item “ Clock” with buttons - 2- and - 4-.
- Confirm selection with button - 3-.
- If “ Hour” is marked, marked menu item is located between both horizontal lines, confirm again with button - 3- and set correct hour with buttons - 2- and - 4-.
- Confirm again with button - 3- and change to minute setting which is done the same as when setting the hour.
- You can leave the menu again with button - 1-.
- Turn the ignition off.

4.50 Camshaft Drive Toothed Bet, 2.0L FSI and TFSI Only, Removing and Installing

Note

Generally, it is not necessary to replace the belt before reaching the next replacement interval. In particular, cracks on the back side of the belt do not affect service life and cannot be claimed as goodwill or warranty measures.

- Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 15 ; Removal and Installation .

4.51 Spark Plugs, Replacing

⇒ “4.51.1 3.2L Fuel Injection Engine”, page 101

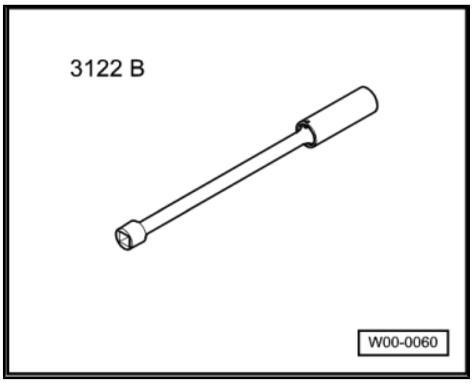
⇒ “4.51.2 2.0L FSI, TFSI and TSI”, page 105

⇒ “4.51.3 2.5L Gasoline Fuel Injection Engines”, page 109

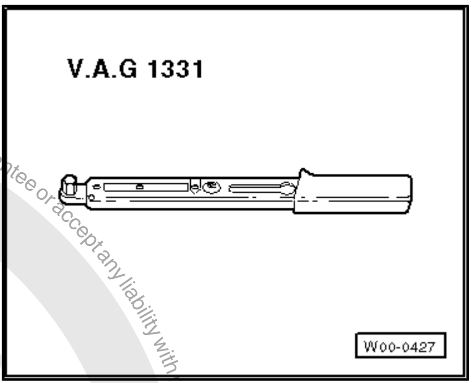
4.51.1 3.2L Fuel Injection Engine

Special tools and workshop equipment required

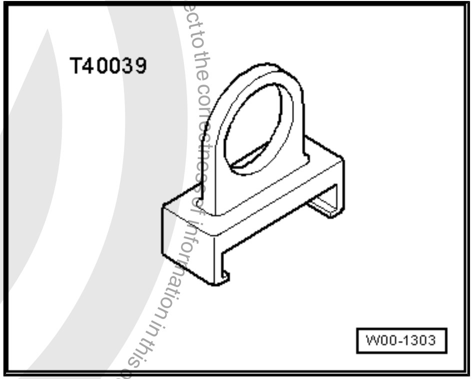
- Spark Plug Removal Tool - 3122 B-


3122 B
W00-0060

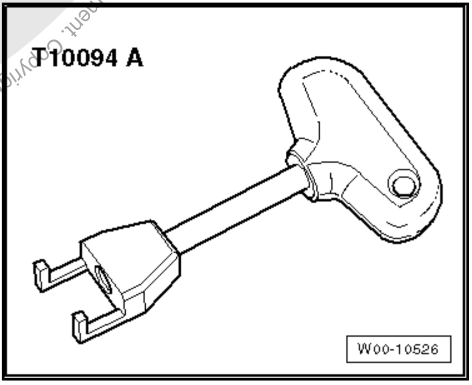
- Torque Wrench 5-50Nm - VAG1331-


V.A.G 1331
W00-0427

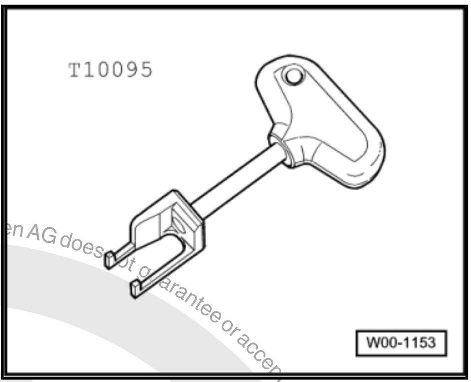
- Puller - Ignition Coil - T40039-


T40039
W00-1303

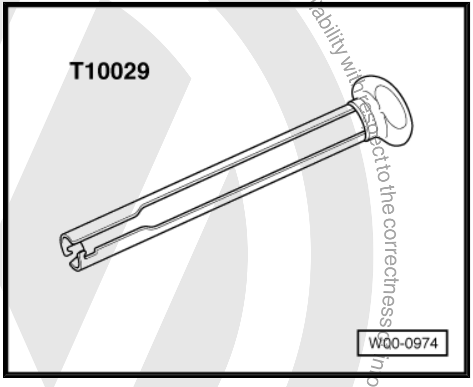
- Puller - Ignition Coil - T10094 A-


T10094 A
W00-10526

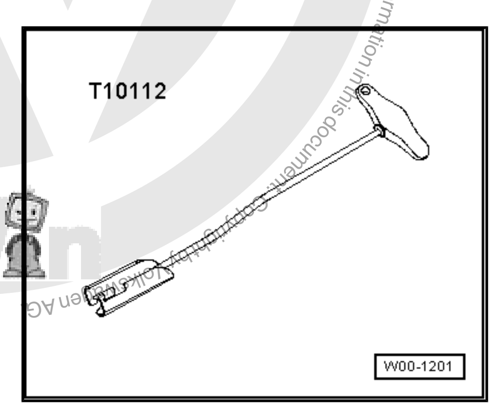
- Puller - Ignition Coil - T10095A-


T10095
W00-1153

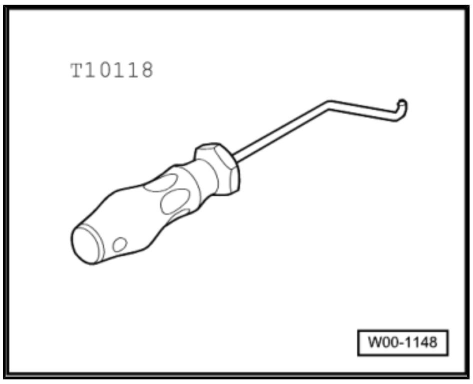
- Spark Plug Wire Tool - T10029-


T10029
W00-0974

- Puller - Spark Plug Connector - T10112-

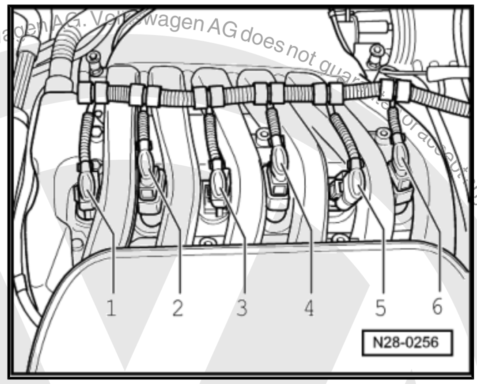

T10112
W00-1201

- Elbow Assembly Tool - T10118-

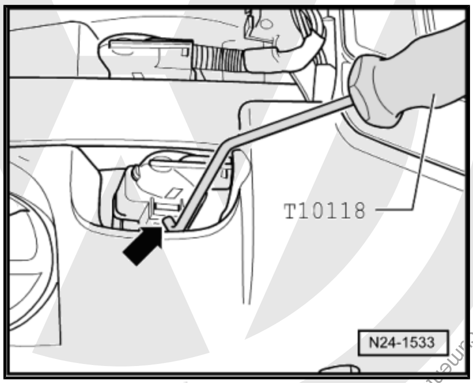

T10118
W00-1148

Removing

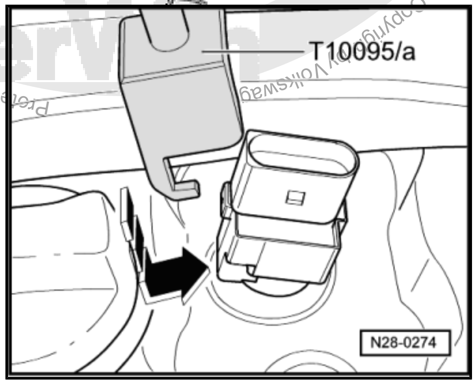
- Disconnect connector for spark plugs with power output stage - arrows-.



- Place the Elbow Assembly Tool - T10118- on connector retainer - arrow-, and carefully remove connector.

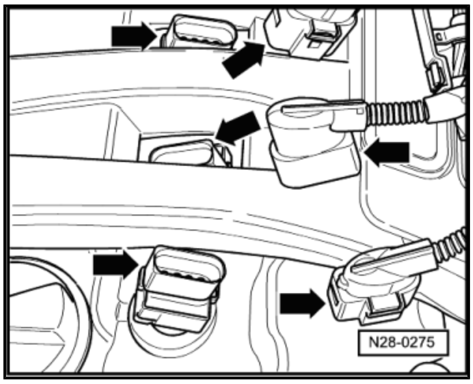


- Push the Puller - Ignition Coil - T10095/A- from the straight connector side, in the direction of the arrow, on the ignition coil with power output stage
- Pull the ignition coil with power output stage up perpendicularly and out.

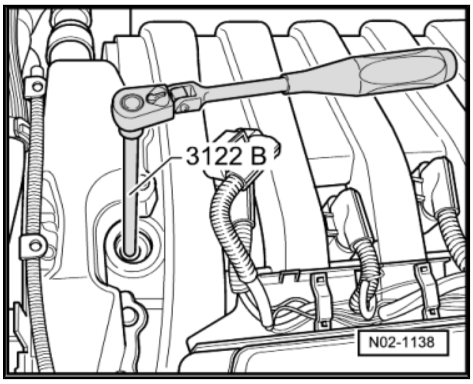


- Observe the installed locations of the ignition coils with power output stages to the connectors, before they are removed - arrows-.

The straight side of the connector must fit to the straight side of the ignition coil with power output stage.



– Remove spark plugs using Spark Plug Removal Tool - VAS3122B- .



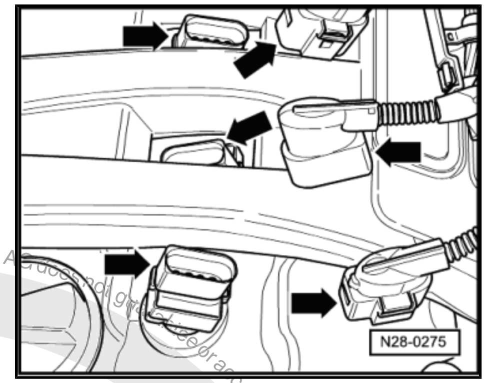
Note

- ♦ *Plug designation and tightening specification, refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 28 ; Specifications .*
- ♦ *Follow all disposal regulations.*

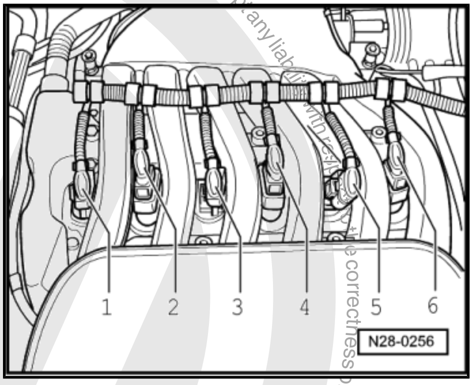
Installing

– Screw in new spark plugs using Spark Plug Removal Tool - VAS3122B- .

– Carefully place the ignition coils with power output stages on the spark plug connectors, so that the straight connector sides match one another - arrows-.



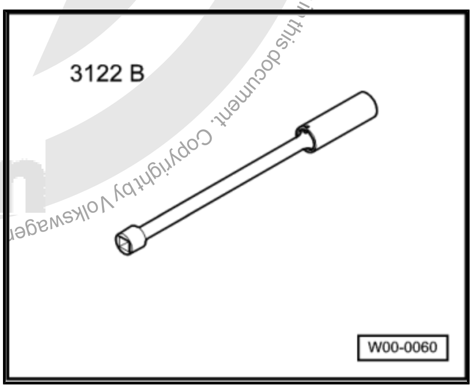
– Connect connectors 1 to 6 for ignition coils with power output stages.



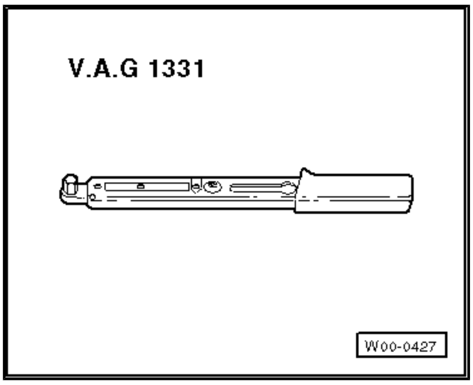
4.51.2 2.0L FSI, TFSI and TSI

Special tools and workshop equipment required

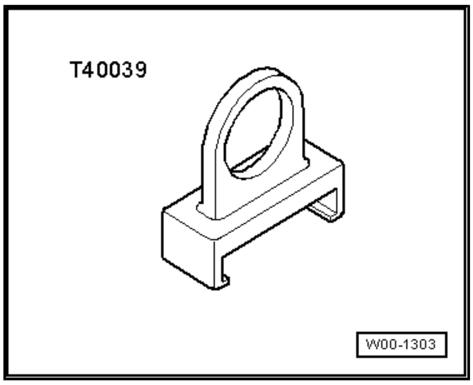
- ♦ Spark Plug Removal Tool - 3122 B-



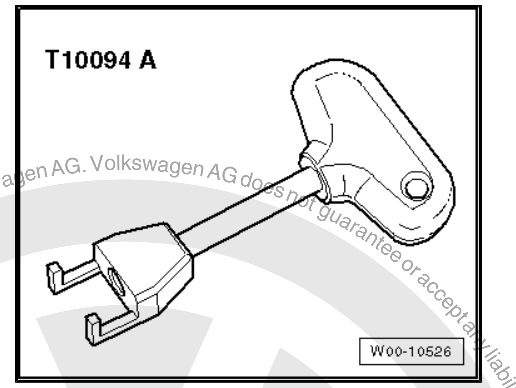
- Torque Wrench 5-50Nm - VAG1331-


V.A.G 1331
W00-0427

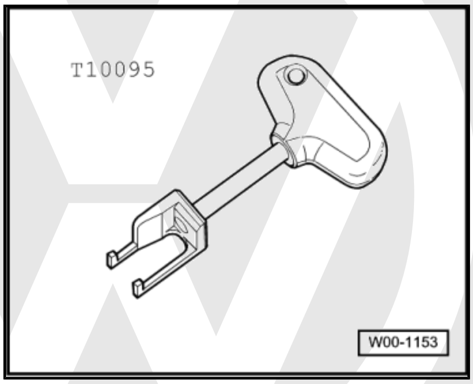
- Puller - Ignition Coil - T40039-


T40039
W00-1303

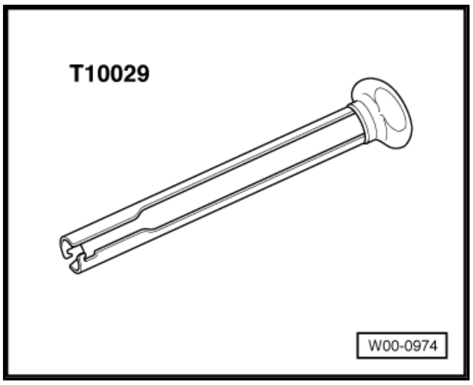
- Puller - Ignition Coil - T10094 A-


T10094 A
W00-10526

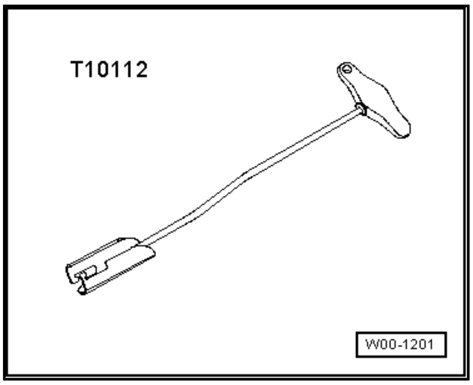
- Puller - Ignition Coil - T10095A-


T10095
W00-1153

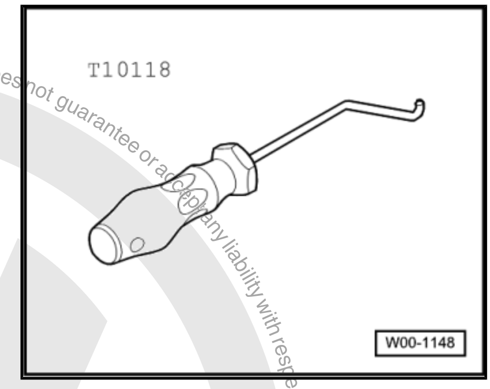
- Spark Plug Wire Tool - T10029-


T10029
W00-0974

- Puller - Spark Plug Connector - T10112-


T10112
W00-1201

- Elbow Assembly Tool - T10118-


T10118
W00-1148

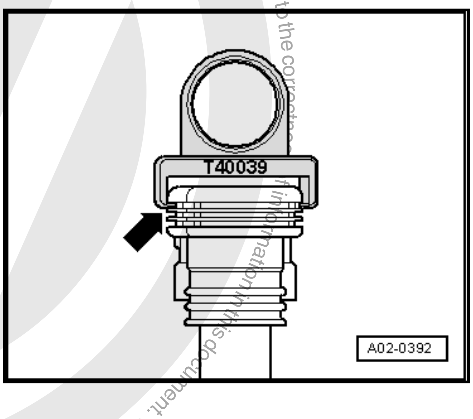
Removing

Perform the following:

– Remove engine covers. Refer to ⇒ “4.24 Upper Engine Cover, Removing and Installing”, page 58 .

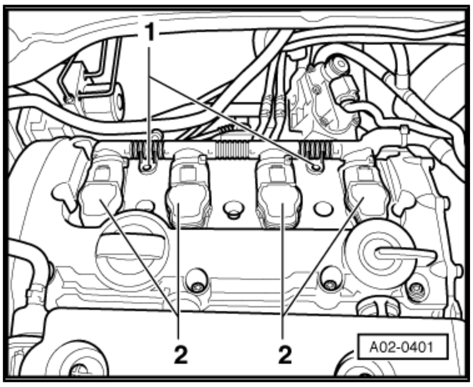
Note

- *To remove spark plugs, place Puller - Ignition Coil - T40039- on topmost thick rib -arrow- of ignition coils with power output stages.*
- *If lower ribs are used, these can be damaged*


T40039
A02-0392

Spark plugs are located under ignition coils with power output stages - 2-.

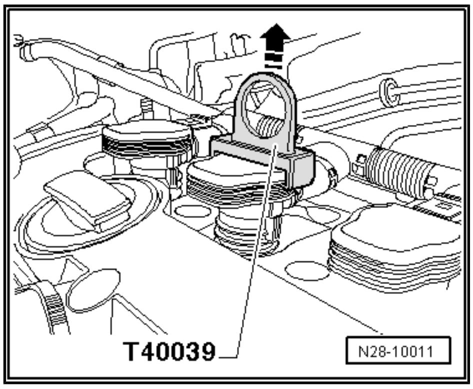
– Remove both bolts - 1-.



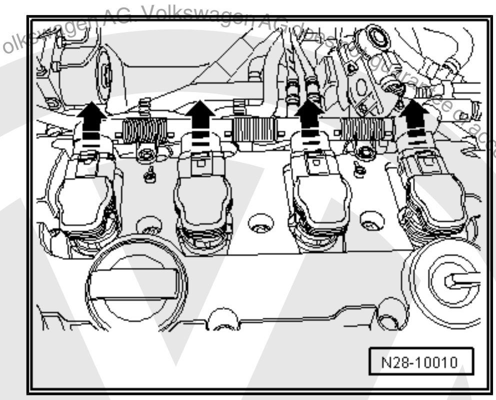
Note

Note installation position of ignition coils with power output stages!

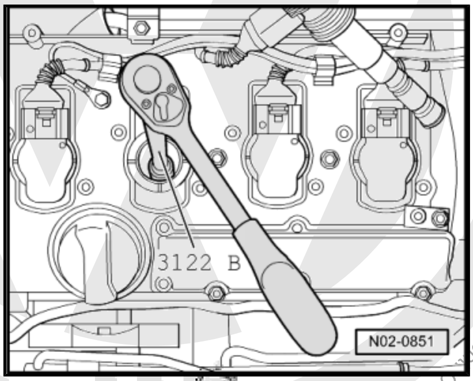
– Pull all ignition coils approximately 30 mm out of cylinder head in direction of arrow using Puller - Ignition Coil - T40039- .



– Push connector in direction of ignition coils with power output stages, press catch down by hand and disconnect connectors - arrows-.



– Remove spark plugs using Spark Plug Removal Tool - VAS3122 B- .

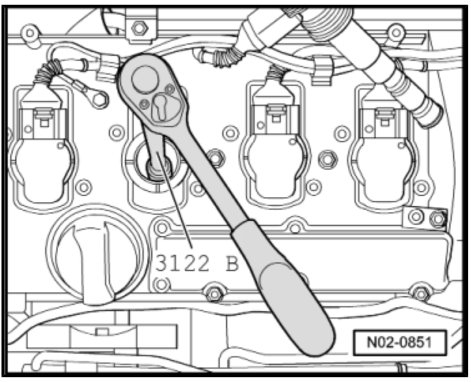


Note

- *Plug designation and tightening specification, refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 28 ; Specifications .*
- *Follow all disposal regulations.*

Installing

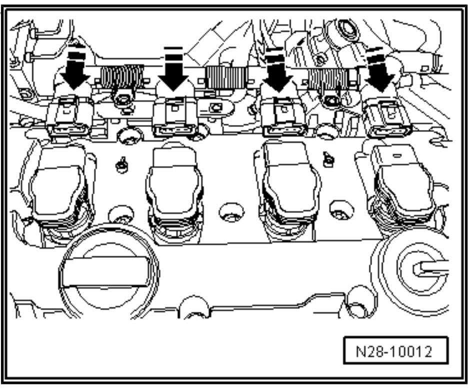
– Screw in new spark plugs using Spark Plug Removal Tool - VAS3122 B- .



– Guide ignition coils with power output stages into cylinder head.

– Align ignition coils with power output stages into designated recesses of cylinder head cover.

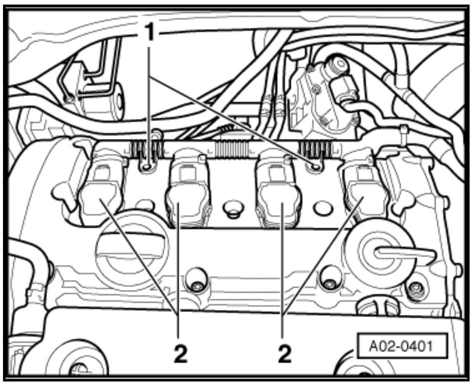
– Connect all connectors to ignition coils - arrows-.



– Press the ignition coils with power output stages onto the spark plugs by hand, until they stop. They must engage audibly.

– Secure wiring using bolts - 1-.

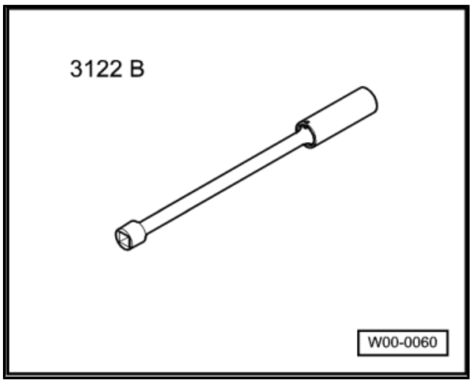
– Install engine cover.



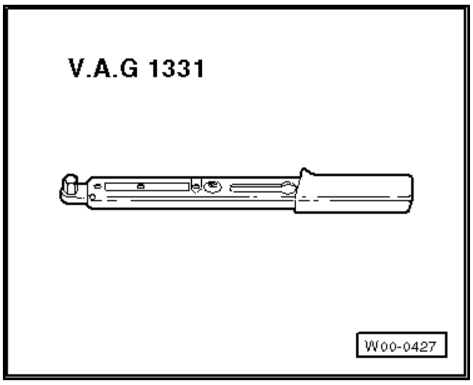
4.51.3 2.5L Gasoline Fuel Injection Engines

Special tools and workshop equipment required

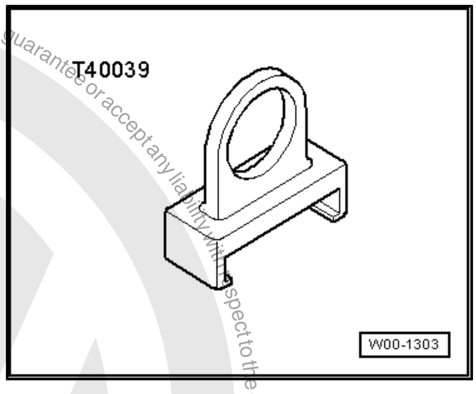
♦ Spark Plug Removal Tool - 3122 B-



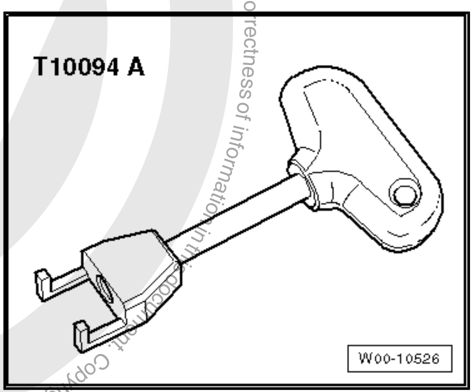
- Torque Wrench 5-50Nm - VAG1331-


V.A.G 1331
W00-0427

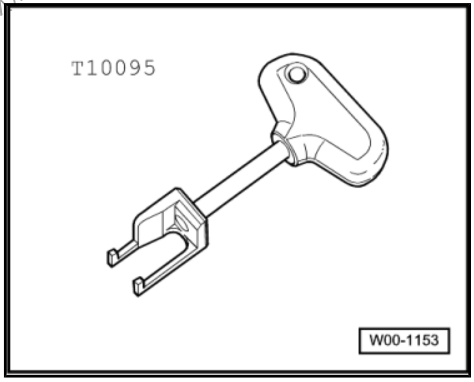
- Puller - Ignition Coil - T40039-


T40039
W00-1303

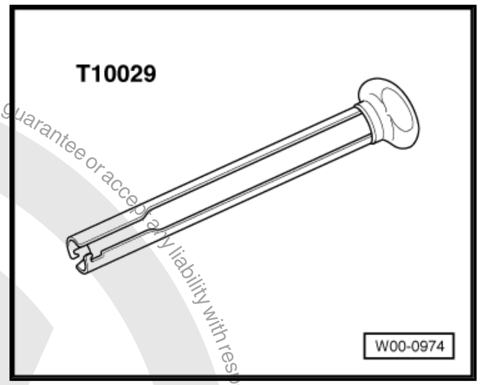
- Puller - Ignition Coil - T10094 A-


T10094 A
W00-10526

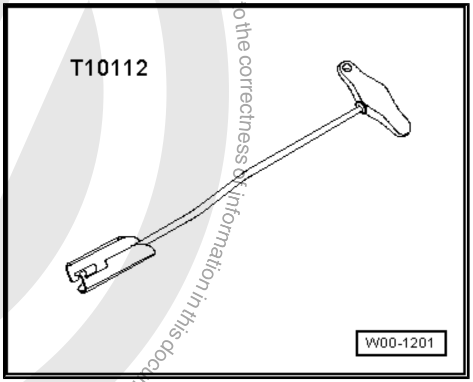
- Puller - Ignition Coil - T10095A-


T10095
W00-1153

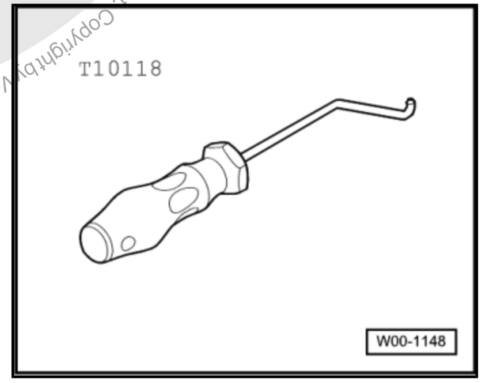
- Spark Plug Wire Tool - T10029-


T10029
W00-0974

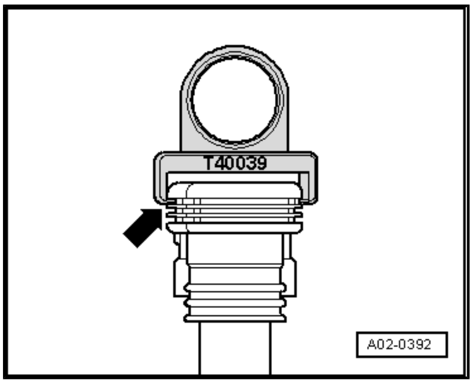
- Puller - Spark Plug Connector - T10112-


T10112
W00-1201

- Elbow Assembly Tool - T10118-


T10118
W00-1148

Removing:


T40039
A02-0392

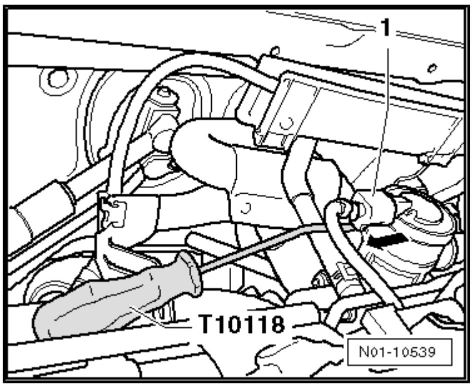
Note

- *To pull off spark plugs, place Puller - Ignition Coil - T40039- on topmost thick rib - arrow- of ignition coils with power output stages.*
- *If lower ribs are used, these can be damaged*

– Remove engine cover. Refer to ⇒ “4.24 Upper Engine Cover, Removing and Installing”, page 58 .

Spark plugs are located under ignition coils with power output stages.

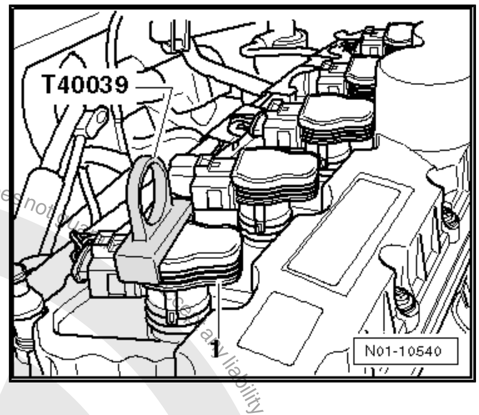
– Pull off the connector - 1- with Elbow Assembly Tool - T10118- in direction of arrow.



Note

It is necessary to pull off the connector so that afterwards the ignition coils with power output stages with connected wires can be set aside without disturbing the routing of the wiring!

– Pull out all ignition coils with power output stages - 1- upward using Puller - Ignition Coil - T40039- .



Note

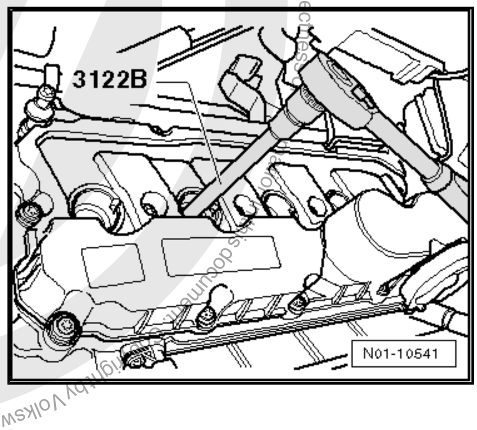
- ♦ *When pulling out ignition coils with power output stages, the wiring and connectors for ignition coils can remain connected.*
- ♦ *Note installation position of ignition coils with power output stages!*

– Set ignition coils with power output stages (with lines connected) carefully to the side.

Caution

Make sure wires are not kinked or damaged.

– Remove spark plugs using Spark Plug Removal Tool - VAS3122 B- .



Installing

– Screw in new spark plugs using Spark Plug Removal Tool - VAS3122 B- and tighten to 20 Nm.

– Guide ignition coils with power output stages into cylinder head and align ignition coils to designated recesses of cylinder head cover.

– Press ignition coils with power output stages on to spark plugs up to stop, they must engage audibly.

– Press the connector onto the exhaust gas recirculation valve until it is noticeably engaged.

Note

Make sure that wiring of ignition coils with power output stages is routed properly.

– Install engine cover. Refer to ⇒ “4.24 Upper Engine Cover, Removing and Installing”, page 58 .

4.52 Front and Rear Final Drive, Checking Oil Level

Refer to ⇒ Automatic Transmission; Rep. Gr. 39 ; General Information

5 Glossary

These descriptions only apply to “Maintenance”. They are not intended to be generally applicable!

Term	Description
ABS	Anti-lock braking system: the ABS is a regulation device in the brake system, that prevents the wheels from locking up while braking. This allows lane stability and steering capacity to be maintained.
Automatic Transmission Fluid	Automatic Transmission Fluid: Transmission oil for automatic transmission.
ATF level	"Fill height" of ATF in transmission.
CO	Carbon monoxide: results by incomplete combustion of fuels containing carbon
CZ	Cetane number: Measure for ignition quality/performance of Diesel fuel
DIN	Deutsches Institut für Normung e.V (German Institute for Standards)
E85	fluid ethanol fuel for operating gasoline engines adapted for that purpose. Contains a ratio of 85% ethanol to 15% gasoline.
ET-No.	Abbreviation for Replacement Part Number.
EN	Euro-Norm
EOBD	uro On Board Diagnostic (OBD)
FAME	Fatty Acid Methyl Ester
FSI	Fuel Stratified Injection; concerns the fuel injection
TFSI	Turbo Fuel Stratified Injection
TSI	From model year 2008, the designation TFSI is being discontinued and is being replaced by TSI. Within the designation TSI, there is a separation as TSI-Turbocharger and TSI-Twincharger.
	TSI-Turbocharger: Charging only with turbocharger
	TSI-Twincharger: Charging with the turbocharger and the compressor
MIL	Malfunction Indicator Light: American designation for emissions warning light K83
USA and Canada	North American Region
OBD	On Board Diagnostic, OBD monitors all components that influence the emission quality
OBD-II	American On Board Diagnostic (OBD)
PD	Pumpe-Düse: Injection unit on diesel engines
PR number	Abbreviation for production control number. It identifies additional equipment or country-specific differences among other things.
PM	English: particulate matter, ash particle value of diesel engine emissions
QG0	Vehicles that are “not” equipped at the factory with the components for LongLife service. For maintenance, the time/distance dependent intervals apply (fixed intervals).
QG2	LongLife service is not activated at the factory. This means, vehicles have a fixed service interval display (time and distance dependent maintenance intervals) and are equipped with the following components: ◆ Fixed service interval indicator in instrument cluster ◆ Engine oil level sensor ◆ Brake pad wear indicator
Readiness code	8-character binary code, that indicates if all emissions related diagnostics may be performed by the engine management
RON	Research Octane Number: Measure for anti-knock properties of gasoline
SAE	Society of Automotive Engineers: Society which generates designations / guidelines as to how legal requirements can be implemented (e.g. Norms)
SD	Normally aspirated Diesel engine
SDI	Normally aspirated Diesel engine with direct injection
TDI	Turbo Diesel engine with direct injection

Term	Description
VEP	Distributor injection pump
ULEV	Ultra Low Emission Vehicles
SIE	Service Interval Extension
Common Rail (CR)	Refers to a shared high-pressure fuel injection line (rail), that supplies fuel to all cylinders of a respective cylinder bank.
Snap sensor	Also known as finger probe, oxygen sensor heater, oxygen sensor flat or flat oxygen sensor. The output of the oxygen sensor value occurs via an erratically increasing voltage curve. Lambda value is determined from a change in voltage. Sensor is used as a sensor behind catalytic converter.
Broad band sensor	Also called Universal Oxygen Sensor. The output of the oxygen sensor value occurs via a nearly linear increase in amperage. Lambda value is determined from a change in current strength. Thereby, measurement of oxygen sensor values are possible over a larger measurement range (broader band). Sensor is implemented as a sensor before catalytic converter.
TPM, TPI	Tire pressure monitoring, tire pressure indicator

Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Volkswagen retailer or other qualified shop. We especially urge you to consult an authorized Volkswagen retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Volkswagen.

- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.

- Volkswagen is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Volkswagen retailer parts department for the latest information.

- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the VAG 1551 Scan Tool (ST).

- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.

- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.

- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.

- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.

- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.

- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.

- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.

- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

next

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Version 1.0

Cautions & Warnings

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.

- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.

- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly; do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Volkswagen specifications. Makeshift tools, parts and procedures will not make good repairs.

- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.

- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.

- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.

- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.

- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.

- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.

- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.

- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).

- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Volkswagen Service technicians should test, disassemble or service the airbag system.

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Version 1.0

Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.

- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the VAG 1551 Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.

- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.

- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.

back OK

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